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CENTERS FOR DISEASE CONTROL AND PREVENTION

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SUBSTANCES AND DISEASE REGISTRY

CONVENE THE

OAK RIDGE RESERVATION HEALTH EFFECTS SUBCOMMITTEE

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DR. KOWETHA DAVIDSON: Ok, I think we're ready now. I'll call the meeting to order. I think we have quorum so we can get started. First, I would like to welcome our new recorder, Joan Roberts. She lives in Oak Ridge. She is a lifetime resident of Oak Ridge and she's a certified court reporter and she'll be taking our minutes today. So, I'm asking everyone when you talk please speak into the microphone because she's not familiar with who we are and also identify yourself as well so that she will know who to attribute the comments to, because if you don't it may come out to whom it may concern or from whom it may concern. Ok, we will start with the introduction and since Jeff has so kindly decided to sit right here next to the front table we will start with Jeff.

MR. JEFF HILL: Yeah, I told them there wasn't a whole lot of difference in teacher's pet and teacher's pest. So, see if I sit here next time. Jeff Hill, a member of the committee.

(Whereupon, David Johnson; Bobby Sonnenburg; Don CREASIA; Tony Malinauskas; Don Box; Susan Kaplan; Jon Richards, EPA Region IV; Brenda Vowell, Liaison Department of Health; Bob Craig; Charles Washington, Sr.; Peggy Adkins; George Gartseff; Herman Cember; L. C. Manley; Lorine Spencer all introduced themselves.)

DR. DAVIDSON: Will the rest of our ATSDR staff and guests please just give your name?

(Whereupon, Jack Hanley , ATSDR; Timothy Joseph, DOE; Al Brooks; Paul Parson, Oak Ridger; Jennifer Sergenson,

ATSDR; Dr. William Taylor, ATSDR; Marilyn Horton, ATSDR; Melissa Fish, ATSDR; Jerry Pereira, ATSDR; Sandra Isaacs, ATSDR; Paul Charp; Burt Cooper, ATSDR all introduced themselves.)

DR. DAVIDSON: And I'm Kowetha Davidson. And we have two more people coming in and I will just give their names because they're on their way in. It's Karen Galloway and Pete Malmquist. On our agenda review we have a short agenda today and hopefully we will be out before too long, maybe around 5:00, 5:30, but if we have to go over in time a little bit we will. The first item on the agenda today will be Bill who is going to give us a discussion on the conclusion categories for the public health assessment. And if the subcommittee have no objection the next two items on the agenda, Karen, you're over here. If the subcommittee has no objections the next two items on the agenda the presentation by Paul and Bill Hanley, I'm sorry, Jack Hanley, Jack Hanley will be reversed. Paul will give his overview of the document first and then we will have a discussion, you know, of the public comments by Jack after that, and that can lead into the ORRHES discussion that follows. Which follows that will be the recommendations from our work group. Our public comments today will be from 2:30 til 3:00. So, members of the public who would like to speak you'll have the opportunity to speak at 2:30 to 3:00. If you have any burning issues on our discussion as they're going on just wave your hand so that I'll know that you're there. Our break is at 3:00, and we'll try not to go beyond 3:00 because that will give us the opportunity to give our recorder a break as

well. And following that, you know, we will have the remaining part of our work group discussion and vote and Jerry will give an update on the project management. And then Lorine will have a discussion on our committee membership because, you know, we're at a transition stage in that at this time. And then we'll just have the rest of our agenda with the unfinished business and new business, etcetera. Are there any questions regarding the agenda? James?

MR. JAMES LEWIS: Sorry I'm late. Is the agenda as written?

DR. DAVIDSON: No, I had said at the beginning we will reverse the discussion with Paul and Jack. Paul will go first and then Jack. Ok, under our correspondence, I think you have it on the table in front of you, a copy of the letter that I sent, I'm sorry, from EPA Headquarters. I won't go through that, you know, but you can read it at your convenience. There are some slight changes, you know, from when I went over this in the PHA and the change that was made was that I wrote the letter so that it was coming from me rather than the subcommittee because it could not come from the subcommittee because it was not a subcommittee letter; it was a letter from the Chair to EPA. And I should also mention that I have not received a response as of yet. And now you also have in your notebooks under item number two is meeting minutes from our October meeting and I would like to entertain a motion for approval unless there are further discussion on the minutes. Lewis?

MR. LEWIS: I guess I ask that, I made a request after looking at the minutes of the meeting–

DR. DAVIDSON: You need to, as we mentioned before we have a new recorder so you have to speak into the microphone.

MR. LEWIS: After reviewing the minutes of the meeting I made a special request that ATSDR look at going back and doing a more detailed, I guess, documentation of the discussion that was held around Jack Hanley's presentation where Herman Cember was involved and I guess I don't know if that was done. I attempted to review to compare that; they indicated that they were going to do that. I'd like to know if that was addressed or do they plan to address it? I think I gave that, that was given to Lorine.

MS. LORINE SPENCER: My understanding, I didn't go back word for word, but my understanding is there was more detail put in and we did put in specific items that you mentioned and I know those are in the minutes because I looked specifically for those.

MR. LEWIS: I don't know if I can challenge that right now but there was a couple of statements I'd like to talk to you about, you know, after that. Thank you.

DR. DAVIDSON: We have a motion on the floor to approve the minutes. All those in favor say aye. We will take a voice vote. All those opposed? The minutes are approved.

MS. SPENCER: Behind tab 4 you'll find the action items. There were no outstanding action items at the last meeting; we had none. We do have some that are still pending that we are awaiting some closure on. We did make the corrections that Susan had there were a couple of spellings and other things so those have been corrected. So, please let me know if there are any other corrections to the action items but we have none outstanding from the last meeting.

DR. DAVIDSON: Ok, if we've got that all out of the way we can now get started with the real part of our meeting. So, Bill, you're on.

DR. WILLIAM TAYLOR: Good afternoon. Can you hear? Good. The focus of today's meeting is primarily on the Y-12 Uranium Releases Public Health Assessment and you all will be hearing a lot more about that. I'm going to give you a very brief introduction to conclusion categories of public health assessments. The reason for this talk is that you have before you today resolutions to consider on concurring with the conclusions of the public health assessment, the Y-12 assessment. My talk is more generic and I want to give you a little background so you understand what that means, what the conclusions are. And as a little background I will tell you that when the agency first started doing health assessments in the 1980's there was a lot of variety in those reports and it became very clear to the staff that worked at that time that they needed to standardize what they were doing. And as a part of that process

quite a few people got together and put out this text which is *Public Health Assessment Guidance Manual.* This was released and final in 1992 and it's really quite a remarkable document. It not only takes you through the steps of conducting a health assessment but also there's a lot of information to draw on that helps the health assessors to complete that job. After close to ten years of using this document the agency staff and others who were using it realized that there was room for improvement and some updating and so, in the late 1990's they began updating it and right now there is a newer version of it that is not yet final. But what is final is that the agency has adopted the conclusion categories from the revised version of the guidance manual, and that's what I'm going to be talking from today is the newer version; the one that's in use in the agency. So, whereas the updated *Public Health Assessment Guidance Manual* is not yet final the conclusion categories are. I have about eleven slides. I'm going to go through some of them very rapidly. I just want to point out some things to you and I'm going to try to keep this talk fairly short. I'm going to be talking about conclusions, recommendations, and the public health action plan, but I'm generally going to concentrate on conclusions. Oh, you have a handout in front of you with most of my slides on it by the way, and you can follow along. There's one that's out of order from the selection but it's the set with the lines on it if you want to take notes. That's just the way it was printed. Public health assessment conclusions are intended to characterize the degree of public health hazard at a site based on these three principle bullets here. The existence of past, current,

or potential future exposures to site-specific contaminants including radionuclides or physical or safety hazards. Secondly, the susceptibility of the potentially exposed population; and finally, the likelihood of exposures resulting in adverse health effects. That's what the conclusions are about. There are three conclusions and five conclusion categories. Basically, the conclusions are that the conditions pose a hazard, do not pose a hazard, or pose an unknown hazard. The five conclusion categories are listed here.

DR. HERMAN CEMBER: Where it says: pose an unknown hazard. Does that mean that there is a hazard but you don't know what it is or is it that you don't know whether or not a hazard exists?

DR. TAYLOR: It means that we do not know whether a hazard exists. Good question, thanks. The five conclusion categories are as listed. You can read them. Urgent, public health hazard, public health hazard indeterminate, no apparent, and no public health hazard. Now, when I write conditions up here at the top I might be referring to a particular contaminant of concern, a particular pathway such as breathing air or drinking water. I may be referring to the site as a whole or I may be referring to past, present, or future exposures. The specific meaning is framed by the particular public health assessment and we usually, sometimes there are different choices that we can make as public health assessors. We pick a frame work that works best for the particular instance that we're talking about and Jack and Paul will tell you more about the frame work for the Y-12 public health assessment. So, conditions can

have different meanings depending on the specific document. This is an overhead right out of the guidance manual and it shows you the relationship between three conclusions and five categories. And this is a graphic way of presenting it. The Categories 1 and 2 fall under the hazard and Categories 4 and 5 under no hazard. I think it's pretty obvious. I think the point I'm making here is that the public health assessor does not make up the language for the conclusion. The language is selected out of the guidance manual and we use those terms and those categories. This is the menu that we choose from when we make our decision.

MR. WASHINGTON: What's the difference between no apparent public health hazard and no public health hazard?

DR. TAYLOR: That's a good question. My next slide is on the definitions of the categories so I will address that. You may not have this in your handouts. Ok, you've got it, good. 'No apparent' applies to sites where exposure might have occurred in the past or is still occurring but the exposures are not at levels likely to cause adverse health effects. With 'no public health hazard' Category 5 applies to sites where no exposure exists. So, with number four exposures may have or probably do exists, but the levels of exposure are not likely to cause adverse health effects. And in number five no exposures as best as we can tell. The difference between Categories 1 and 2 is a difference between timing. Number 1, urgent public health hazard, applies to sites that have certain public physical hazards or evidence of short-term, less

than one year site- related exposures, which could result in adverse health effects and require quick intervention to stop people from being exposed. With our second category, public health hazard, applies to sites that have certain physical hazards or evidence of chronic more than one year site-related exposures that could result in adverse health effects. And finally, the indeterminate public health hazard is where critical information is lacking, missing, or have not yet been gathered to support a judgment. So, this is the menu and these are the definitions that we're working from and this will be the foundation for our discussions later today when we talk about the Y-12 Uranium releases. What does it mean to select a category? This is wording I've taken out of the guidance manual: It means to arrive at an answer to the question based on available exposure data, toxicological data, epidemiologic data, medical data, and site-specific health outcome data. Are adverse health effects expected in the community including impacts to any uniquely vulnerable populations. For example, children and the elderly in the community.

MR. LEWIS: I guess you've got a listing of all sorts of data there. Are we expected to have an evaluation of all quote available date in those areas if it is considered legitimate or validated prior to selecting a category?

DR. TAYLOR: Yes.

MR. BOB CRAIG: James said 'are we to', and in fact we are not to, ATSDR is. We advise ATSDR but they make the

conclusion.

DR. TAYLOR: That's true. The health assessor and the agency that puts out the document, that is us.

MR. LEWIS: And if for any reason they don't utilize some of that should we expect an explanation that's laid out in the body of the document that clarifies why that is not being used or what the expectations are around that issue?

DR. TAYLOR: I think the answer is not necessarily. It's up to the health assessor to do that evaluation and determine what data are pertinent.

MR. WASHINGTON: Do you really have a lot of data for the toxicological data on the various contaminants?

DR. TAYLOR: I think it varies quite a bit. We usually have some and over the period of years, the last few decades, we've accumulated quite a lot for different contaminants. This is not only at a single site. This would be animal studies and human studies when those studies are available.

MR. WASHINGTON: What about the combination of the contaminants?

DR. TAYLOR: That's a difficult issue, but it's one that's been taken up by the EPA, as well as other organizations for, I would say, a good ten years and there's research going on in that area. So, there is

some information that's available.

MR. WASHINGTON: Of those that are listed, which one would you say is most credible?

DR. TAYLOR: Credible in what sense?

MR. WASHINGTON: Which one has the most reliability and therefore validity?

DR. TAYLOR: Well, the data are, let me hold that question please and I think I'll answer it or attempt to address it in a moment, and if I don't let me know. Yes?

MS. BARBARA SONNENBURG: How would you define health outcome data? Give examples.

DR. TAYLOR: These are, for example, cancer incidents data are health outcome data. These are the data that the state is collecting and is in a registry. Those are public data or data on populations that are available about people's health.

MS. SONNENBURG: How about children and maybe some kind of educational defects? Would that be health outcome data?

DR. TAYLOR: If it's available.

MS. SONNENBURG: And if it can be compared?

MR. TAYLOR: Yes. So, for example, somebody's private medical records are not health outcome data for our

purposes because we don't have access to that. But if it's collected in a manner that we can examine then it's health outcome data. CDC, for example, keeps databases on mortality all around the country, all across the country. So, those are health outcome data as well. If there are particular health studies that look at the health of a particular community those might be available; those could be health outcome data.

MR. WASHINGTON: What about the uncorroborated data we got on iodine when we had a meeting some five or six months ago? There were about four or five individuals who came to that meeting and said that they had had that problem and they at least said to us that there were more people in Oak Ridge that had a similar problem?

DR. TAYLOR: I would say the health assessors take into account anecdotal data, which is how I would describe what you're saying, and there's not any particular kind of analysis we can do with that, but it's taken into consideration.

MR. WASHINGTON: But we didn't do a follow up, right, with those individuals?

DR. TAYLOR: I'm not aware of what we did.

MR. WASHINGTON: Does anybody else remember that? What we did at that meeting? Does anybody else remember the meeting where we had about four or five different individuals who at the time when we were discussing the iodine data came to us and said that many of their

classmate had had problems? Did we ever do a follow up on that? Does anybody else on the Board remember that?

MS. PEGGY ADKINS: I remember one person in particular coming and saying that at Kingston the Kinser Drug or Kingston Drug had a very unusual amount of thyroid medication that they issued every month that it was totally out of balance with what other drug stores they compared themselves to administer.

MR. JACK HANLEY: Those concerns were likely to have been captured, and we can validate that, but I'm sure they were captured into the community concerns of database we have. And if it's an iodine or thyroid issue in discussion that will likely be discussed in the iodine public health assessment and we would hold off that discussion until we get to the iodine where that becomes, where thyroid becomes an issue.

DR. DAVIDSON: I have a question on the relationship of the health outcome data and I guess in the other data too, when it comes to categories in which there's no exposure. So, if the health outcome data is this data related to the particular contaminant that's being studied or is this just kind of a general thing? For instance, cancer outcome data would not be related to chemicals that are not carcinogens that have not shown to be carcinogens in either human or animal studies? Would that type of data be discussed for those particular contaminants or would you focus on it for contaminants in which you have said there's no exposure? Because if there's no

exposure then there shouldn't be any health outcome related to that particular contaminant.

DR. TAYLOR: I have a couple answers to that. One is that it might depend in part on how strong the exposure assessment is. If our data for our exposure assessment is very strong there may be little need for a discussion of health outcome data. If the exposure assessment indicates that there were not exposures at levels of health concern. On the other the hand, health outcome data still could be included and still could be discussed if there is a strong enough interest in that based on concerns in the community. So, all of these things have to be considered by the team in Atlanta by the health assessors in deciding what's appropriate to have in the document.

MR. DON BOX: I have a question on Category 3 here that you might clarify for me. In our lives everything seems to be tightening down more and more all the time. If you have a Category 3 and it's judged as really not a hazard and then new regs come out making it a hazard, do you grandfather this Category 3 or do you go back and reassess everything on it? Category 4, actually.

DR. TAYLOR: Category 4?

MR. BOX: Yes. Where it says–

DR. TAYLOR: We do not re-evaluate our public health assessments unless there is significant and compelling reason to do that, and it may be because new toxicological data appear that are overwhelming

and suggest to us that we were not safe enough or we were overly protective. But it depends on the quality of the information that become available and not regulations.

DR. CEMBER: I have a comment with regard to the items for which there's no exposure but a possible health outcome. If people are concerned and they're worried about it, we know, everybody knows, all the scientists and I think most people know there's a strong relationship between body and mind. And if people are fearful about it and we do know there's real data that show it influences the immune system, for example. So, if people are concerned about the possibility, if some rumor spreads around that there's contaminant A in there and there really isn't any or at least you haven't been able to find it but people are very much concerned about it, this might lead to some mental effects. Does the agency consider mental effects as a medical outcome or a health outcome?

DR. TAYLOR: I don't know the answer to that. I think, I'm not aware that that has occurred although it might have. One problem may be that mental effects are something that aren't collected in databases as much.

DR. CEMBER: The mental attitude of the concern have physiological effects; that's what I was thinking of, and there is a relationship.

DR. PAUL CHARP: In response to Dr.

Cember's question, in some of the assessments I have done on radiological issues where the category was Category 1, an urgent public health concern, we've taken into account the psychological effects that people have being exposed to high levels of radiation. So, that's not the direct answer to your question but we have evaluated that and I've told people that they should either see a physician or be evaluated for some type of psychiatric or whatever. So, it has been thought about for the radiation sites and there has actually been quite a few discussions within CDC and ATSDR dealing with weapons of mass destruction; the psychological impacts.

DR. TAYLOR: Are there more questions here?

MR. WASHINGTON: You said that you had told some people if they thought they had some problem with this that they ought to see, what did you say, a psychiatrist?

DR. CHARP: Well, they should seek medical help. We can't tell people they need to go see a psychiatrist.

MR. WASHINGTON: And this is actually in the database, the statements that you're making are really a part of–

DR. CHARP: They will be somewhere within the ATSDR record of activity for that site. It wouldn't necessarily be for Oak Ridge but we've had five sites across the country that were contaminated with radioactive material that we considered sufficient hazard where we told EPA put these on the national priority list, and that's the ones they've been evaluated for.

MS. KAPLAN: I don't think that exactly addressed the question that Herman asked though because, no, it did not. Because he was commenting about the psychological impact on the physical body that results in tangible physical problems, not to go see a shrink because you're crazy. You know, that was kind of the implication I got there but he's talking about actual physical effects because your immune system goes down because you're worried all the time.

DR. CHARP: Well, I know, and I skirted the issue and I said this didn't answer his question exactly but it was, I knew the question he was asking and, have we ever evaluated that way, no. But we have suggested people go seek medical help if they need it.

DR. TAYLOR: Probably the answer is no we've not looked at physical effects as a result of stress or concerns and fear.

MS. ADKINS: Since this has been brought up I just want to clarify for the record that in the fifties and sixties it was just the opposite; everyone was assured unquestionably that there was no harm, that everything was safe, and everybody felt that everything was safe and that it was a joke to think otherwise. That was until they died from cancer and all these other diseases. So, I want to counteract, I just want that to be on the record that scientists would come to the classrooms and in just general conversation it was laughable that there was any possibility that there was harm from the plants.

MR. LEWIS: I want to get back to the

statement I heard Kowetha made and correct me if I'm wrong. Kowetha indicated if there was no exposure, you know whether or not you would have to use the health outcome data as a part of your evaluation. I listened to that very closely because I guess when we get to the place there has been some exposure, whether it's enough to create a hazard is something different. But along with what Herman is saying, we're talking about the community at large. The community at large has a quote perception, they lack the same technical knowledge that some of the experts in this room have, and they have a deep-seated feeling which was brought out via a good assessment of what the community's concerns were which is what we did not have, which indicated that cancer was the number one issue. And as a part of that effort I'm sort of silly enough to always read not only your current manual but your old manual, and when I compare those two when you go like from one rev to another you always compare the sections to see what happens. A lot of times you can de-emphasize something. You go from over here where you have a category that says you will address health outcome data. You come over here and it's a little vague. But if you read deep enough into the body of the text it says there shall be a discussion in that area. I guess the point I'm getting at is that because cancer was such a high item and if it falls under the area of quote health outcome data, is it standard practice when you get information of this nature that that is always taken into account and evaluated as it relates to the health of the, the mental health of the public who is very concerned about something over thirty or forty years. Do you

weigh that in as part of the evidence that determines whether or not to address that as a part of your health assessment?

DR. TAYLOR: I think the answer is yes. I want to return to that issue and Mr. Washington's question and some comments that various people have raised in this overhead. I'm not going to read these. The title here is what factor influence the selection of a conclusion category and you see here at the bottom, I'm going to move this up so you can see it. Community health concern and community specific health outcome data are part of that, and what I want to say to you again is that the health assessor has to determine where is the most compelling information and we call it a weight of evidence approach in the new guidance manual and it's a subjective professional opinion. So, there's not one answer for every public health assessment. The data have to be looked at for how good they are and how adequate they are, data of all different kinds. So, I hope that helps you understand. Many times, I would say most of the time, the conclusion falls out pretty easily, usually from the exposure assessment and evaluation. Sometimes it's not so clear but the health assessor is compelled by the guidance manual and the way we've been doing things over the course of the agency to take into consideration all of the available information.

DR. CEMBER: I don't see in there a category on the magnitude of the exposure. We talked about the exposures there, potential and actual, but I'm sure you do consider the magnitude of the exposure,

but it's not listed explicitly in there.

DR. TAYLOR: Yeah, when I hear the term exposure assessment myself I think it actually can mean a couple of things. It can mean a pathways assessment of whether or not there were exposures. And secondly, if there were exposures, what were the magnitudes and what are the health implications of those. So, you look at the exposures and ATSDR puts its exposures in terms of doses. So, that's our unit of measure of exposure that we evaluate and then we look at the toxicological information and what health information is available. So, that is part of the work. Alright, I'm going to switch now and tell you very quickly about recommendations. I'm going to keep this fairly general because again they're going to be, they could be vastly different from one public health assessment and from one site to another. So, recommendations are made to identify practical ways to stop, reduce, or prevent exposure; activities to further characterize the site and possible exposure; and health activities that are service or research oriented, such as medical monitoring, health education, health studies, health surveillance, or a substance specific research. Those are wide categories so it means the recommendations can cover a lot of territory. And in the next slide I have some examples of these and I'm not going to read them all except to point out again that the headings are: actions to cease or reduce exposures; actions for site characterization; and at the bottom here health activities, which may include education or conducting other types of research. Now, there are many more examples and I didn't bring lists of

those for you. I just wanted to touch on the fact that recommendations can cover a wide variety of issues. Next, I want to tell you what a public health action plan is. It's a part of the public health assessment, and this is wording I took right out of the guidance manual. Public health assessment must include a plan that clearly describes the implementation and timing of recommended public health actions. Public health action plans outline actions or activities that have already been taken to protect public health, activities that are currently under way, and activities that will be conducted in the future. And the footnote reads: If the site poses no public health hazard that is conclusion Category Number 5 a public health action plan may not be necessary. Now, what this all says is that it's a way of framing the recommendations. It's an elaboration. It's a little bit more than just sticking recommendations with no explanation; it's a little bit of background and it specifies the timing of any intended activities. The recommendations can be made to different organizations and agencies. They may go to EPA, for example, and they may be for other parts of ATSDR or other local health authorities.

MR. WASHINGTON: It was brought to our attention some time ago that at one time during the distant past near K-25 there was a very viable community there, two or three hundred people. And that community no longer exists, but we had some people come to the committee and tell us that various people died of all kinds of illnesses. Would that be instructive to include in this study? Could we look for some of those people who

lived in that community? Would that shed some light on what we are doing or would it just confuse the issue?

DR. TAYLOR: It may be important. We have a separate public health assessment for the K-25 releases and the communities that were impacted by those releases will be looked at separately from the public health assessment for the Y-12 Uranium releases. That's part of the work that's coming. This is my last slide. I've listed some possible factors to consider when developing the recommendations and the public health action plan. You have these in front of you and I won't read them to you. It's just a variety of issues that we, as public health assessors, take into consideration. That's all I have. Are there any more questions? Mr. Lewis?

MR. LEWIS: I have a comment. I'd like to thank you for a presentation that, in my opinion, is very late. I really feel that I sort of pushed to have this done. The whole concept of what's captured in this guidance manual I think would be beneficial to us if we had a good preview of what they do and how they do it. I've taken time to try to read these things and study it. I hope this has been helpful. I would like to see us look at having some real presentation given to us so that we'll all be aware of what we're trying to do or at least what we're looking at. I think it would be helpful to the community and to the subcommittee. I hope that could be taken into consideration at a later date.

DR. DAVIDSON: Thanks, Bill.

DR. CHARP: I'm going to condense the several hundred pages of the health assessment down into one overhead. You're probably asking why did I have to read the two hundred pages if you're going to only do it in one, but such is life. This overhead, as I said, is a summary of all the exposures that ATSDR evaluated for the Uranium releases from Y-12. This includes past exposures and current exposures. The past exposures were evaluated based on the State of Tennessee's dose reconstruction project that was overseen by the ORHASP Steering Panel. What ATSDR did, as well as what the State did, was look at the chemical and radiological issues associated with Uranium exposures. We looked at total pathways which would include air, water, soil, and all that information that were summarized in the dose reconstruction project and, based on what was in those documents, we determined that, for radiation people were being exposed and that was true also for the chemical aspects of Uranium exposure. People were being exposed both through inhalation and through the ingestion pathway. What we did differently from the State is whereas the dose reconstruction project and the State report was carried out to fifty-two years of exposure, we tacked on an additional eighteen years. So, we carried it up to seventy years of exposure. And based on that increased exposure we estimated that the average radiological dose that was received by a member of the public was a hundred and fifty-five millirem over seventy years. We used a screening value for cancer of five thousand millirem over seventy years, which is a topic of a whole other discussion that may

or may not come up today. And based on our evaluation, the hundred and fifty-five millirem over seventy years was about thirty-two times lower than our cancer screening value. In the case of the chemical exposure to Uranium, Uranium is a heavy metal and as such it has a chemical effect on the kidneys. We looked at the kidney problems for ingestion and inhalation and also the problems of Uranium exposure to the lung. Based on inhalation it was about one hundred thirty times lower than ATSDR's minimal risk level, MRL, for inhalation. You see the MRL is listed as eight micrograms per cubic meter of air and our evaluation, based on the state dose reconstruction, was a maximum of about six times ten to the minus five milligrams per cubic meter. That's point zero, no, point zero six micrograms per cubic meter. So, it's about a hundred thirty times lower than the MRL. In the case of ingestion, the Uranium would be ingested through food, soil, water, so on, be absorbed, and the Uranium would be deposited in the kidneys. Based on that pathway the maximum amount we found was, this converts to about thirteen micrograms of Uranium per kilogram body weight per day. The ATSDR MRL is two micrograms per kilogram body weight per day. The issue here is that yes, it's above ATSDR's minimal risk level for ingestion, but just because it's above the minimal risk level does not mean you will have an adverse health effect. If you notice, it says that all the doses here were less than the dose at which renal health effects have been observed in the most sensitive mammalian species and I believe that was the rabbit. Where are the toxicology folks here? Was that the rabbit, Jack, for Uranium? Ingestion past, yeah, the

rabbit. Remember, for the MRL's ATSDR adds additional safety factors so although the minimum dose at which adverse health effects were seen were .05 micrograms per kilogram per day, by the time ATSDR added in the safety factors it knocked it down to the two micrograms. Yes, Tony?

DR. ANTHONY MALINAUSKAS: What is the limits of uncertainty on all of these numbers?

DR. CHARP: On the ASTDR numbers?

DR. MALINAUSKAS: Well, on the estimated doses you're quoting them out to three decimal places.

DR. CHARP: They're the same number of significant figures that were expressed, I believe, in the dose reconstruction project.

DR. MALINAUSKAS: But is the uncertainty a factor of two, a factor of ten, a factor of a thousand?

DR. CHARP: I can't tell you that off the top of my head. I doubt if it's much more than ten, but don't quote me on that.

DR. MALINAUSKAS: Well, some of those are fairly close. If it is a factor of a hundred and it's thirty-two times less you've got an altogether different situation.

DR. CHARP: Yeah, I agree. Remember, there are uncertainty factors included in the ATSDR MRL's that could be as much as a thousand or so above, below the lowest observed adverse effect level. Al?

MR. BROOKS: It seems that we're using the term uncertainty factor here with two meanings. As I understand it these numbers are conservative estimates and as such they should be at the conservative bounds of the values, whereas uncertainty is usually referred to as an estimate of the validity of the central measure. If these things have a safety factor of a thousand in them the question of uncertainty becomes almost meaningless.

DR. MALINAUSKAS: When you start quoting three decimal places I think you've got to clarify your position.

DR. CHARP: Right, in some cases you're absolutely right about the significant figures. One versus 1.0 is a big difference. Barbara?

MS. SONNENBURG: I have a different subject if you're done with that one.

MR. HANLEY: Responding to your question, Tony, we're trying to put this all on one slide but in the health assessment we explain where we see the uncertainties and the conservatism built into the assessment and we actually describe that, for example, that past exposures were based on, for the Scarboro community, were actually based on East Fork Poplar Creek sediment samples, which is unlikely to happen. And those are estimated to be at least, the flood plain samples were at least an order of magnitude higher than what was found at Scarboro. So, we had a list of

conservative aspects in these estimates. Also, these comparison values have safety factors built into them also. So, the document provides much more detail. Paul is just trying here to capture it all on one slide and keep it simple.

MS. SONNENBURG: Going back to the document we looked at before, is there any medical data included in your work?

DR. CHARP: In the health assessment there is a section on toxicological implications and–

MS. SONNENBURG: No, I'm talking about people. Looking at figures about the health of people, medical data.

DR. CHARP: Jack will answer that.

MR. HANLEY: I was going to get into that a little more in detail later and I can do that.

MS. SONNENBURG: Ok, I can wait.

MR. HANLEY: But just to answer the questions, in estimating these doses in exposure pathway, no, health outcome data was not used. However, the document summarizes a number of investigations and studies that did occur over the last ten, fifteen years.

MS. SONNENBURG: But in all those studies very few of them looked at people?

MR. HANLEY: No.

MS. SONNENBURG: What you did, the soil and the air and so forth and so on, but I haven't seen very much that looked at

people.

MR. HANLEY: There are sections in there where there are investigations and evaluations of people and health outcome data and I'll point those out to you later.

DR. CEMBER: I'd just like to recommend a book that was written by Alan Brodsky that deals with Uranium and the hazards from Uranium and he cites numerous studies on individuals and on populations who had been exposed and overexposed to Uranium and describes the quantitative relationships between the dose and the response, etc. So Alan Brodsky wrote that and let me recommend that and get it into the record here.

DR. CHARP: That's B-r-o-d-s-k-y I believe. And also related to that in the last few years the World Health Organization IARC, International Agency for Cancer Research, IARC, just classified Uranium as a non-human carcinogen. It does not cause cancer in humans, natural Uranium. Any other questions on this before I go to the last column, the conclusion category?

MS. SONNENBURG: What about the changed uranium?

DR. CHARP: Enriched Uranium?

MS. SONNENBURG: Yeah.

DR. CHARP: Enriched Uranium, once you get above an enrichment of ten to fifteen percent, I believe, you start having a

radiological problem versus a chemical problem. So, if you've ingested enriched uranium then you have to take into account the radiological issues and not the chemical carcinogenic issue.

MS. SONNENBURG: So, for Oak Ridge, original uranium really doesn't–

DR. CHARP: The uranium that came into the facility, the ore, would not be considered a carcinogen. The enriched uranium that came from K-25 or Y-12, depending on the level of enrichment, could. And also since K-25 also used recycled uranium then you're going to have to take into account some of the other contaminants that may be in there.

MR. L.C. MANLEY: What about depleted uranium, especially the metals? That thing they have given the people in Desert Storm such problem?

DR. CHARP: From a radiological issue depleted uranium is, pure depleted uranium, is about one half as radioactive as natural uranium.

MR. MANLEY: But the metal is an alloy.

DR. CHARP: Metal is an alloy–

MR. MANLEY: Therefore, you've got other things that could cause a physical problem.

DR. CHARP: Right. There has been a study going on by someone at the, I think she's at Hopkins, Melissa McDiarmid, who

has been looking at soldiers from Desert Storm that have embedded uranium projectile pieces in their body that cannot be removed through surgery and thus far the only problems they have seen has been, I believe, elevated uranium in the urine and no other problems.

MR. WASHINGTON: That's not exactly true, is it? You're talking about heavy metals so when you say no problem that really isn't exactly true, is it?

DR. CHARP: Exact words, no, that's not exactly true. No reported problems, no diagnosed problems, no observed problems other than carrying around some depleted uranium. The same thing would occur, as I understand it, from people who have been shot with bullets that can't have the bullets removed.

MR. WASHINGTON: Oh, if it's still in there, yeah, but if it's finally divided then you have an additional problem, don't you? Because you're talking about not only whether it's depleted or enriched. Even if it's depleted you're talking about a heavy metal and that heavy metal has the ability to go places that other things don't generally go. It's going to act kind of like lead in some respect.

DR. CHARP: I don't know all the toxicology of the heavy metals. The only thing I do remember hearing McDiarmid talk about is when these depleted uranium fragments are in the body there's some type of, like a cyst forms around the particles, and the particles fully abcess.

MR. WASHINGTON: I can agree with that.

DR. CHARP: So, I don't know what the answer is to your question. I would assume some of these metals do leach out into the circulation, but currently there hasn't been any detected problems associated with that.

DR. DAVIDSON: I would just like to make one statement that, you know, if you have heavy metals and if they are localized within a certain area, if they're in the urine that means they're mobilized. If they appear in the urine that means they're mobilized in the body and they have a potential to distribute to the body, so which means if the person is being exposed because otherwise it could not be excreted.

MR. MANLEY: The depleted uranium, not only that the metal, it burns, oxides rapidly and it burns easily. So, therefore, there are more ways to get into the system other than by, you know, fragments. So, you can inhale it very easily.

DR. CHARP: I believe they've also looked at the inhalation pathway. I know the military army up at Aberdeen proving grounds actually has built a building where they can fire a depleted uranium tank round into the building and collect all the fragments and they can measure the air particulate distribution within the building. So, they've begun to model the particulate size and the vaporization of the projectiles inside the buildings. That study is going on as you speak.

MR. WASHINGTON: That was the outcome of my patent. The Penetrator is my patent. The Penetrator is really not a weapon per se, it's just a hunk of depleted uranium with an explosive on it. It hits the tank, the momentum goes in and what blows up really is the ammunition inside the tank.

DR. CHARP: All the Penetrator does is punch a hole in it.

MR. WASHINGTON: Right.

DR. CHARP: It's a fancy hole puncher at a density of about twenty grams per cubic centimeter.

MS. ADKINS: I just wanted to check in simple terms are we connected in any way to the research with the Persian Gulf soldiers who came back supposedly exposed to dust, and so forth, and who have bizarre symptoms of, just all kinds of bizarre symptoms. I'm sure there's a study going on of those people. Are we connected in any way to that?

DR. CHARP: This person, Melissa McDiarmid, has been looking at the depleted uranium issues with the soldiers. Is she still a member of the ATSDR Board of Scientific Counselors? She is. She is the Chair.

MR. WASHINGTON: When these studies are going, it's kind of like agent orange. Agent orange, you know, when it first began, when they first began to study it, you know, nobody was hurt in any way by Agent Orange, but as years went by, you know, scientists soon became a little more

credible and they began to tell the truth about it. I believe they're doing the same thing about the Penetrator because people ate around this stuff. You know, they were in the field. They were eating, drinking, and doing all the sleeping around this stuff and that to me, the study, the first studies that they did it just doesn't fit my rationalization of what happens to a heavy metal, you know, when you vaporize it.

DR. CHARP: Let me go on.

DR. DAVIDSON: Don has a question, but we need to get back on the subject.

DR. CHARP: Let me say one more thing to Mr. Washington and then we can ask the other question, alright? The U.S. uranium and trans-uranium registries has been following a number of DOE workers who worked in several uranium plants including the big uranium plants at Hanford and when I last talked to the former director of that registry they had not yet found any long-term effects of uranium on these workers who had massive doses of uranium documented in their bodies. Herman, do you want to add anything to that?

DR. CEMBER: No, you've covered it except that these studies you're talking about were autopsy studies. So, they analyzed the various tissues for uranium and then looked at the medical histories of those persons and they found no relationship between, so far I believe, haven't found any relationships between the symptoms that they, the medical history and the

uranium body burden. Is that correct? I believe that's the case.

MR. BOX: Just a quick question here. On the releases from Y-12 I know there was quite a bit of electromagnetic separations of the plutonium isotopes, plutonium, neptunium, all these. Were any of those considered along with the uranium or is that something separate or is that just not even looked into?

DR. CHARP: The state evaluated a number of the trans-uranics and those were ruled out for further evaluation. That was especially true at K-25, but I faintly remember them reviewing the same information for Y-12 and saying it doesn't need to go beyond the initial screening that they did. Let me quickly go over the current exposure to radiation. I'm just going to go over the, I'll go over both of them. One of the issues has been the community at Scarboro, the most relevant community to evaluate exposures to uranium releases from Y-12. Jack will get into some of that discussion, I believe, when he goes over the conclusions and some of the other things he's going to discuss. The only thing I want to say about Scarboro is that it is the closest community and it's been a community of great concern both with respect to is our community safe, are the foods that are grown in Scarboro safe to eat, and how does Scarboro compare to other parts of Oak Ridge and other parts of the country. So, we looked at the ingestion and inhalation of uranium. In Scarboro we looked at soil data that was collected by Florida A&M and also validated by EPA. When you compare the Florida A&M data to the EPA data the data are

unremarkable which means they're almost indistinguishable from one another. And when you compare those data to data across the country the uranium in Scarboro is indistinguishable from uranium in Chattanooga or uranium in Kansas or other parts of the country and is very similar to the uranium that DOE detected in their soil background characterization studies. Based on all that we went ahead and looked at the ingestion of foods from a private garden in Scarboro. In the garden that was grown around monitoring station 46 in Scarboro, monitoring stations and private gardens in Claxton and Maryville, around Norris Lake and a few other places and to skip everything else on here all their doses that we could find for current exposure, meaning from about 1990 on up, are well below our screening value and it's well below the ATSDR MRL for chemical exposures. So, to say that the conclusion category that we selected for both past and current exposures to uranium released from Y-12 we said are no apparent public health hazards. I'd be glad to delve into these in a little more in detail if you have any more questions on it. It's all well laid out in the health assessment and I don't want to take up much more time on this part.

DR. CRAIG: Looking at the current exposures, if anything would fit the category of no public health hazard it appears that that would. Why did you pick the no apparent?

DR. CHARP: Well, the reason why is remember for no public health hazard the very last Category 5 says that you have no exposure, but in Scarboro you had some air exposure. You have some

exposure going on. Now, let me get on a different soap box and say that and I'm sure my supervisor sitting over there in the corner will get after me on this one but it won't be the first time. I'll just tell her to take a number. ATSDR in the fifteen years that I have been with the agency has had a problem dealing with radioactivity and radiation. All the things the agency has done has been chemically oriented. When I came on the scene and I said if you have something in a drum that's sealed you have no exposure, but if you put radium in that drum you're being exposed and they said well, how can that be. I said, oh, you know, gamma rays go through the drum. You're going to have an exposure whether or not you're in contact with it. You put a source outside and it's hot enough, radioactive enough, you can be exposed. So, there are, in essence, if you go by the true definition of Category 5, you will never have a site with radioactive material on the site that you have a no exposure category. So, the minimum exposure for a radiological site is no apparent public health concern. So, really there's only four categories for that. That's one reason why it's no apparent. Just because there's no quote exposure you're being exposed to gamma radiation or something else if it doesn't emit gamma rays.

DR. CRAIG: Yeah, but at that level you couldn't even determine it from background. I mean, you couldn't even tell it apart.

DR. CHARP: Right, but it's still exposure. Let's see. I don't know who was up.

DR. DAVIDSON: Don hasn't spoken.

DR. CHARP: Well, you know, that's fine. James can wait.

MR. CREASIA: I would just like to point out on these estimated doses in the screening comparison values these are all chronic exposures. Do you take into account any acute exposures?

DR. CHARP: We do not take into account acute exposures because these exposures in Scarboro have been going on for, our exposure pathways covered at least ten years. Now, we did have annual air monitoring results and those annual doses were very low. They would not be considered a public health hazard from a chronic exposure.

MR. CREASIA: But those are still annual doses though. Somebody may get a big whiff one day.

DR. CHARP: Right. We had no instantaneous exposure, we had no information on instantaneous releases. One issue is that the air monitoring stations are quarterly measurements so you can't really do a fourteen day on it. Every three months the samples would be collected. I've had that issue raised before at another DOE site where they said we released ten kilograms of uranium and I said was that in one shot or over a period of time and so, we don't know.

MR. CREASIA: And I'm thinking back mainly to, and it gets to the issue about the worker versus the community. The worker

can be in the shop and get a massive dose, an acute dose, go home and nothing happens to him right away especially with the uranium, not the uranium but the radioactive doses. But he's still going to be categorized, when he gets sick he's going to be categorized in the community as a chronically exposed person.

DR. CHARP: Yes and no. Depending on how good the bio-monitoring is within the lab. If he thinks, he or she thinks they may have gotten exposure they would go to the ratings and safety officer and they would do the nose swabs and that type of stuff to see if he did get a quote body burden. Dr. Cember has been involved in a number of those cases. I'd like to refer to him for those types of questions.

DR. CEMBER: If we believe he's gotten an exposure we do various kinds of checks to see whether he has. We try to estimate what his intake was. We have a lot of reasonably good mathematical models for doing this based on urine analyses and fecal analyses and whole body counting and if we think he really has a big intake immediately the nose swabs are probably the most effective, immediately right on at the time before he blows his nose, and so on. But we can estimate with a reasonable degree of accuracy what his intake was based on by what they call bioassay and this is based on urine analyses mainly and fecal analyses and whole body counting. And whole body counting doesn't mean we count dead bodies like we did in Vietnam. It means that we put a big Geiger counter over the person and see how much radiation comes from him. So, we have lots of those data, and

enough really to validate the mathematical models that we have.

DR. CHARP: But the other issue too that I think Don is getting to is that if the person doesn't know they got an intake and they go home then you don't know whether it was acute or chronic.

MR. CREASIA: That's right and I'm well familiar with all the mathematical models and the safety hazards and so forth, not safety hazard but the precautions, but I'll tell you if you really work in the lab you're not going to report your exposure if that's what you're doing. If that's your research, you skip by it because you don't want anybody to know it.

DR. CEMBER: I agree with that and I've seen that many times. In fact, I've tried to do some research in medical health physics and when the physicians would do their what they call interventional radiology and their livelihood depends on doing a cardiac catheterization while someone is under the, being examined with x-rays by fluoroscopy, what they do is they just, if they're approaching the limit they will just not wear their film badges or TLDs.

DR. CHARP: Yeah, I knew a case of somebody worked out in the Biology Division who would, during the early work of DNA structure and P32 would hang his film badge in the middle of the lab and it would still get over exposed.

DR. CEMBER: But that's not in the context that we're talking about here. We're not talking about the research or the physician who is doing this deliberately. We're talking, I think you mean the worker who is

unknowingly exposed, the carpenter who comes in to fix something and is exposed. Isn't that the context in which you are making these comments?

MR. CREASIA: It's both. I mean, I've seen people working there and they get close to the exposure but, you know, you got to get in there and you've got to get that rat and you just go in there anyway. But then when you go home you become part of the community that you get evaluated on.

DR. DAVIDSON: But you're also part of the work force as well.

MR. CREASIA: That's right, but right now we're dealing here only with the community.

DR. DAVIDSON: But community, we're dealing with community exposures and what was released in the community. That's what that dose is based on, not what they were exposed to on the job.

MR. CREASIA: How do you differentiate that when you're looking at the medical records or the systematic or what have you between the person who lives in the community and the person who works at the lab that goes back and forth. I mean, when he goes in the community and he dies he's going to be recorded as a death in such and such community A.

DR. DAVIDSON: But he'll also be recorded as a death of a person who worked at that place.

MR. CREASIA: But we don't mention that in

the paperwork. That's what I'm bringing up; it's not mentioned; it's skipped over, but I agree with you, you know. I think we're talking the same thing really.

DR. DAVIDSON: We're also kind of getting off subject as well.

MR. BOX: Speaking from personal experience on exposure, I was working in the laboratory and there was a very small leak in the glove box on plutonium work and we really didn't know that I had been exposed over a period of time until my badge was read and my urine was analyzed, but it was detected. There's very close accountability on these things. They do read these things seriously; they do catch these things, and they do whatever possible. I had a number of whole body counts here, at Los Alamos, also at Idaho Falls as a check on these things. So, these things are monitored quite well and it shows up, if not right away, like mine was over a period of maybe a month. I had about three times the body burden over that small period of time and yet it was detected, they did what they could. I received the DTPA to flush the material out of my body but it is caught pretty well even though I had worn my badge and I did, but even if I had put my badge aside if you're getting an exposure your urine is going to show up.

MR. LEWIS: I have several comments. Number one, I thought this was a pretty good document. I guess in looking at it Tony brought up an excellent point. If you don't plan to have Jack Hanley tied to this with the explanation and if this gets out as one document I think you ought to

put in a caveat to pick up what he said. The other thing is so you'll know how to get back and as this goes out the question is even over here on past you ought to identify the times, you know, so people have some idea what you're talking about. And when I got over here to the no apparent conclusion categories my question is there are some recommendations that are associated with this. Are there any recommendations, do you think it would warrant putting whatever the recommendations are from the public health assessment in that category to give people some feel of what it is they're going to do if this is going to be a summary document? And the last comment I guess that I have is with health effects evaluation. For the kids I guess related to the current, I know some work was done over there; can you identify any health effects evaluation that may have been done to the people that would have been associated with the past in the evaluation of any kind of data with the people in Scarboro?

DR. CHARP: I don't know where to start with James' shot gun approach to the questions. We'll put the past was from plant start up until about 1995. The current was from about 1990 up through 2002 or so. The no apparent public health hazard categories and the recommendations of the health assessment; the major recommendation was to inform the public of what our findings were and this is part of that recommendation. But there's no, I don't see any reason why we can't put the recommendation in with the conclusion. Sometimes the reviewers back in Atlanta say it needs to be in its own separate paragraph or section, but I agree with your point that it should be

where you read it, so it doesn't hurt to repeat it more than once. As for any type of health effects, the major health effect that you would expect to see from uranium exposure would be, from a chemical point of view, would be kidney toxicity issues. So, if there were any elevated rates of kidney failure or kidney disease in Scarboro, or the surrounding areas that should be an indicator. It's not the only cause for kidney toxicity and kidney issues but it is a potential indicator and other than that, from a radiological point of view, although the kidney is the target organ for the chemical problems, the main storage site for uranium in the body is the bone. So, you could also look for any kind of bone disease related to the radiological properties for uranium. The rest of your question is have they been evaluated? Not to my knowledge.

MS. ADKINS: I just wanted to ask Dr. Cember when were those testing safety checks put into place? Do you know when the safety checks were put into place?

DR. CEMBER: I can't give you a date explicitly but I was here in 1949 at ORNL and we had all of these things, the urinary monitoring and the weekly film badges and everything else, so I don't know how much earlier it was but I do know that at least in 1949 we had it.

MS. ADKINS: And another question. Has any testing been done on the health of the wives who hug the husbands when they come home from work in their work clothes and the children who wear the shoes around the house, wear their daddy's shoes and those kinds of things. Did it

ever go home? Did the safety in washing clothes and, you know, ironing the clothes and sending them back off to work in those clothes, has anybody ever looked at that?

DR. CEMBER: Again, as I recall when I was here and I see it still goes on in various places where I go, we wore, when we came in to work we changed our clothing and when we left we were monitored. We did hand and foot monitoring and portal monitoring. So, if we did take anything home it was less than detectable, but you're right about concern about the families because the wives of asbestos workers, those who were exposed to vermiculite and brought, believe, who brought the asbestos home with them, they found the proper kinds of cancers, lung cancers, in the wives, in some wives, and that's a pretty unmistakable kind of association. But we were monitored before we left. If the general public is going to look at this it's already pretty busy but I would suggest one or two more columns here. You can compress some of them geometrically. What would be the average exposure, let's say, in the United States to uranium generally, both chemically what would be the dose and what would be the radiation dose and what would be the intake? And I think those data are available. Well, the UnScear report has those data in it too. So, I think it would probably be worthwhile clarifying for the general public what we're getting if you live a thousand miles away from here, let's say an average for the country. I think that would put things into perspective; better than the below thirty-two times, etc.

DR. CHARP: I'll turn it over to Jack.

DR. DAVIDSON: Thanks, Paul.

MR. HANLEY: Can everybody just take a two or three minute break until I get set up. We're way over time and I'm sure everyone needs a little stretch and break.

DR. DAVIDSON: Ok. I'll call everyone back as soon as Jack is set up.

(Brief recess.)

MR. HANLEY: I wanted to go over real briefly; this is going to be my presentation. First, I want to go through the public health assessment process real quickly, a quick overview of that; present an overview of the public comments. My presentation is on the public comments. Then ATSDR's responses to all the public's comments, EPA, and then the public comments, and then we're going to present the changes that we made in the public health assessment. Just to recap, in November of last year, 2002, EPA completed its sampling in the Scarboro community. Once we got a hold of that data we started our health assessment on the Y-12 uranium releases and we approached the PHAWG at that meeting and presented the data that we were going to use and discussed the data. We wrote up the health assessment and during that time in December we gave a presentation, informal presentation, on our findings, and by December 31st we had a document out to the PHAWG and the subcommittee. We called it a data validation and initial release. We

presented at the PHAWG meeting last January, January 21st and 22nd, the work group worked over the next few months into February to compile the comments. Tony led that effort in compiling them, putting the PHAWG comments, community comments, community members participated, and the comments were sent to the subcommittee and at the March meeting last year a subcommittee submitted their comments to ATSDR. At the same time, the document went out to other agencies and we received comments from Region IV during this time period. Then on April 22nd we came out with a public comment version and we received comments from the public. We also received comments again from Region IV EPA and EPA Headquarters, it's the Office of Radiation and Indoor Air, and I'll cover those types of comments in a minute. We had a discussion with the subcommittee and then after forty-five days we got comments from the public at this point, and here we are now we're coming back to the subcommittee; we've already been to the PHAWG, and we're coming back to the subcommittee discussing the comments, our responses, and any changes that we've made in the health assessment. That's what we're doing right here. We plan to release the final some time this month, later in the month. Brief overview of the comments, as I said, we actually released the document in April but the formal public comment period started May 5th and went through June 20th. We received comments from thirteen individuals representing at least six organizations and their agencies. ATSDR received and responded to over a hundred and seventy comments, very detailed comments, got detailed responses. Comments that

were kind of general; they got a kind of general answer back, because it's hard to respond to some general comments. We had editorial comments which we did not include in our responses and we looked at the comments that questioned the validity of statements made and we corrected and verified those in the document. What I would like to do at this point is to regarding the EPA comments, before I get into the details of the EPA comments we received a letter yesterday and I'll pass it out. This letter is from Region IV, the Regional Project Manager from Region IV, yeah, Remedial Project Manager, Jeff Crane. I'd like everybody to take a minute and read the letter; we'll just take our time here. What I'd like to do is address a couple of the issues in here, in the letter. Paul and I will address a few of these issues. We have questions after that and you can ask Paul or I or we can get clarification from Jon Richards at EPA and work this out. But as you read the first paragraph, get down towards the middle or a little towards the bottom it says; for the comments originating from Region IV, I just want to note that Region IV says we conclude that ATSDR has provided adequate responses. We had worked with Region IV, spoke with them, and discussed the issues that they had, provided response to them via e-mail discussions, they saw the responses, and as far as Region IV's comments, they say we adequately responded to their comments. The next item, the next sentence says that EPA Region IV noted that some of the ATSDR comments responses to the detailed comments provided by ORIA, that's the Office of Radiation and Indoor Air, may require further consultation between ATSDR and ORIA. On that particular issue,

when we consulted with Region IV when they got the responses, Jon forwarded the responses on to ORIA and the staff up there and when we spoke to Jon after that, Jon Richards at Region IV, he mentioned that ORIA had some concerns and suggested we call them. So, we have an ATSDR staffer in the EPA Headquarters office, he's a liaison, and so we talked to him and he contacted the management in ORIA. ORIA told him that they were not going to have any further comments. So, that is the status of that issue. Now, based on this last sentence here, we encourage your staff to contact ORIA and address any of these concerns, technical comments. They were not going to forward any comments to us in writing, but they're mentioning here that they still have concerns; we're going to approach again ORIA to talk to them and to see if we can address their concerns. I know the committee is concerned about this and Kowetha has written, the Chair has written a letter directly to ORIA and what we would like to do is if we could set up this conference call to discuss these issues we would like to offer Kowetha if she could to sit in and participate in that discussion on these comments and responses to the outstanding issues that ORIA may have. We'll go down to the last paragraph on the first page and I think I'll have Paul address this issue. It is the comment where it says: EPA does not agree with dose or risk criteria ATSDR used for assessing potential long term chronic cancer risk. It says i.e., five thousand millirem a year over seventy years. And Dr. Cember just mentioned that that's not what we used; I don't know if it's a typo, Jon; can we get clarification on that? Because it's really five thousand

millirem over seventy years and it says in your letter, not your letter but Jeff's letter, five thousand millirem a year over seventy years.

MR. JON RICHARDS: Five thousand millirem over seventy years.

MR. HANLEY: So, that's just a typo there?

MR. RICHARDS: Yeah.

MR. HANLEY: Paul, you don't want to answer this? We have presented this material a number of times in subcommittee prior to including it in our assessment. Jeff brought up some good points. We went back and looked at these issues, about a year and a half to two years ago, but regarding this comment I'll let Paul answer this. And I have here, and I'll pass this out right now, this is a, this front page is a summary of EPA Office of Radiation and Indoor Air; this is their summary of their comments, this first page. Following it we have each summary comment, their specific comment, and ATSDR's response to these summary comments and it also identifies which specific comments in the whole set that you all received that it responds to. So, what I would suggest is when you look at this Paul is going to discuss, respond to, this issue about the five thousand millirem and he will use response to EPA summary comment number six. So, if you could turn to EPA comment number six that's where Paul, oh, it's seven, I'm sorry. I apologize, seven.

DR. CHARP: This is from the comments that part of our comments back to EPA, if I remember right, correct?

MR. HANLEY: Yes.

DR. CHARP: Where we discuss the doses and what these doses mean. We used five thousand millirem over seventy years as a cancer comparison value and that was based on our review of the current literature on cancer induction by exposure to ionizing radiation. To give you some indication of how that compares with other recommendations or so on from international and national organizations both the International Commission of Radiological Protection, that's the ICRP, and the National Council on Radiation Protection and Measurements, the M is silent, the NCRP recommend that the public be exposed to no more than a hundred millirem a year. That equates over seventy years to seven thousand millirem, which is a little bit more than our five thousand. The EPA clean up level that at one time was a directive from the Office of Solid Waste and Emergency Response was fifteen millirem per year for all pathways. That's correct, Jon?

MR. RICHARDS: Actually, it's the entire risk range. That's just the upper risk range.

DR. CHARP: Ok, the upper risk range of fifteen millirem a year equated to ten to the minus four thereabouts. When you carry that out over seventy years that's a upper risk range of about a thousand millirem over seventy years. Now, what we calculated for Scarboro in the past was a hundred and fifty-five millirem over seventy years. So, that actually is a little bit lower by about, it's about eighty-five percent lower than the EPA upper risk range

of fifteen millirem a year. Let's see, some other numbers, ATSDR MRL which was for non-cancer was a hundred millilrem a year, that's seven thousand millirem. Again, the ICRP guidance, NCRP guidance, and so on. So, we think that our five thousand millirem over seventy years is within the realm of other national and international organizations who say that over seventy years your dose limit should not be in excess essentially of seven thousand millirem. And we're about ten, twenty percent lower than that. So, we think our five thousand is defensible based on other national exposure recommendations and so on. Now, in a case of risk that's another, let me go ahead and say something about that, Jack. The number I have here at the bottom I've written in by hand is the, are the risk numbers, EPA and the nominal risk for exposure to ionized radiation for cancer is on the order of five in ten thousand chances per rem of exposure per year. I converted this to millirem to keep all the units in order. So, it's a half a chance in a million for a cancer induction per millirem per year. The United Nations in their scientific committee and the effects of atomic radiation say that that risk can vary as much as being two times higher or maybe two times lower. That's why I have, instead of being plus/minus two it's multiplied or divided by two. That's the NSCR estimate. So, when you take into account the seventy-one millirem per year that is somewhat of an elevated risk of about three hundred fifty-five chances in ten thousand or so per millirem. So, it is a higher risk but the risk to background is somewhere on the order of, I think its one chance in a thousand for background exposure, 1.8 per thousand. So, we think our number

is defensible and what I want to show you on this is, again, comparing the past exposure to the folks living around Y-12 based on the Task 6 report. If you take the EPA clean up of fifteen millirem a year, multiply it by seventy years, it takes it up to a thousand and then the green line shows the difference between our hundred and fifty-five estimate being about six times lower than EPA's. So, whether or not it's five thousand or a hundred and fifty or so we think we have a strong case to support our five thousand in seventy years. Now, the panel, there is something in there about the panel.

MR. HANLEY: Yes, at the end on the second page there's a comment that based on your response to comment we understand ATSDR is using an external panel of epidemiologists and radiation experts and are willing to change based on their input. We highly recommend that these experts include representatives from EPA's Office of Radiation and Indoor Air, the Office of Solid Waste and Emergency Response, and EPA's Science Advisory Board Subcommittee on Radiation.

DR. CHARP: The panel is ATSDR's response to concerns raised by community members within the Oak Ridge area. The panel was selected by our administrator, Dr. Henry Falk. He selected three epidemiologists and one radiation person to assist us in this panel. We had, we meaning Jack or myself or Sandy, no one from the Oak Ridge Office or associated with the Oak Ridge project had any input into who would be members of this panel. We did, however, and with Dr. Falk's approval, get some opinions

from two outside experts in the field of radiation epidemiology. One is Dr. Charles Land from the National Cancer Institute who actually e-mailed ATSDR some concerns about our five thousand over seventy years. And another one was Dr. John Boyce who many people could argue that is probably the world's renowned expert on radio epidemiology. And both these folks supplied input to ATSDR. In taking into account all the comments we received, this is the bottom line of the panel and I could probably talk for another fifteen, twenty minutes just on what the panel said and that's being generous. They said; our comparison value of five thousand millirem over seventy years is appropriate for the work ATSDR does. In fact, one of the commenters said it's not that ATSDR's five thousand is too high; it's that the MRL is too low. I thought that was interesting. The panel also said that in the case of expressing the results as a matter of dose or risk it doesn't make any difference how you express your results. The main issue is how you communicate those results to the public. Which way does the public understand? Do they understand risk better or do they understand dose better?

MR. HANLEY: Paul, could I interject here?

DR. CHARP: Yeah.

MR. HANLEY: One of the things that when the panel was there they did mention this about communicating to the public and they suggest that we get out. We explained the effort that we made here with the five thousand millirem, working with the work group, coming to the subcommittee

on a number of occasions, Paul talking about this issue, and the level of effort of developing the tools to try to communicate this information at least to this subcommittee. They thought that was appropriate but the question was then how do you get that information out to others. And so that is still do we use the same materials or something else. It's the outreach to other folks that needs to be possibly worked on with regards to Oak Ridge, but the main issue here was communication. And if you notice with the thermometer-graph, if you put risk numbers or you put dose numbers, it's just going to show that same perspective where things fall. So, if you have risk or dose their basic thing is it's not going to make any difference. The main thing is effectively communicating with the public.

DR. CEMBER: I just want to make a comment on communicating to the public. I think using the word risk is the incorrect thing; it's a technical term that really means a probability of getting something. And I think if we present it to the public we should say our criterion is the chance of getting cancer being less than one in ten thousand or something like that. Don't use the word probability but the chance of getting something rather than the word risk, because I've checked with some friends and the word risk conjures up in their minds an immediate threat to life or limb and it doesn't matter what the number is; it's just the word that's so scary.

MR. HANLEY: And as you mentioned, it's a theoretical risk; it's not an actuarial risk.

MR. LEWIS: Are we going to use, I'm going to try to quote Herman, risk type information as defined by him or are we going to stick with dose when we go to the lay public? Is ATSDR willing to consider looking at risk type numbers?

DR. CHARP: We are willing to consider whatever makes our message most understood by the public. What Al Brooks said was that some people would prefer risk, some people would prefer dose. Jeff?

MR. JEFF HILL: To me, and I think that I'm public, I'm not private so I must be. If you tell me that my likelihood is I'll receive two MR, what does that mean? But if you tell me the likelihood that that same dose is one in one million increased in risk, or whatever term we want to use, that has meaning. The dose doesn't have meaning to me as the public.

DR. DAVIDSON: I think it's all dependant on how we explain dose, because people say the public don't understand dose but dose is an everyday part of public's life. Ask anybody who takes a drug. They can tell you exactly how many milligrams they're taking every day of a drugs. If you're taking Cephalexin, somebody says I'm taking five hundred milligrams. You know, I'm taking a thousand milligrams or I take five hundred. And they do, because you see older people with their medicines, I have seen them in my family. They get those little bottles and they put those things in and they know exactly how much of each one of those things they are taking and they are

looking at it based on dose. And so dose is an actual part; it's how you explain it to people what dose means. Even things like, you know, people read labels on foods. You look at, you know, how many milligrams of sodium I am getting. You know, how many grams of carbohydrates I am getting. You know, all of this is dose. I think this all depends on how you explain it to them. They may not know they're discussing dose, but what they're actually doing is they're discussing dose. I have high blood pressure. If I take in so many milligrams of sodium per day I'm putting myself in trouble, but I have to keep my milligrams of sodium down below this particular level. So, what they are discussing is dose. But you don't explain it to them that they are talking about dose, but it is, its dose.

MR. HANLEY: Only if you understand what that dose means. If I understand that this has five milligrams of fat and this has ten, yeah, the five is better for me. The milligram doesn't mean anything.

DR. DAVIDSON: But when you're talking about doses in relation, if you have a therapeutic dose you can have a dose that's going to cause you problem, it's a dose that's going to be an over dose, because when you talk about over dose I have gotten too much, you know, I have taken too much of this so I have over dosed on it. It's all explained. If you take such and such amount this is going to happen to you if you take this amount. If you don't take the amount below that it's not going to cause you harm. So, that's what I mean.

MR. HILL: You're back to risk. You're saying

this volume creates–

DR. DAVIDSON: No, when I'm saying it's going to cause you harm is that they have evidence that if you have this much it's going to cause you harm.

MR. HILL: So, you're back to risk.

DR. DAVIDSON: No, it's actually an adverse dose because it has been shown to cause harm. That's what I'm talking about. It's not whether you're going to have a one in ten thousand chance of having–

MR. HILL: But you're an epidemiologist, right?

DR. DAVIDSON: No, I'm a toxicologist and we deal in–

MR. HILL: I'm a millwright; I don't deal in dose. I deal in risk.

DR. CHARP: The key thing is to put it in perspective; risk or dose. It has to have a comparison.

MR. HILL: Dose is going to have to have a lot more explanation. When I read Frank Munger he's not going to say the dose. It's going to be risk and that's what, when I pick up the paper that's what I understand. There is a risk associated with this; the risk is one in a million if it's two MR.

DR. DAVIDSON: But what does that actually tell you? It gives you a number. But what is it, when it really gets down to it,

what is it–

MR. HILL: It's an increase in risk per dose.

DR. DAVIDSON: Is one in a million, is it a real increase in risk?

MR. HILL: Yeah, compared to none, yeah, it sure is.

MR. HANLEY: The key is to put it all in perspective, either risk or dose, and you have to have a baseline to compare it to.

MEMBER: Jack, you're correct in that you have to have a baseline to compare it to but I think a lot of the baselines that you've listed there are suspect. And what people really want to know and what they really understand is it safer for me to live where I am as opposed to LA or Richmond, Virginia. That they understand.

MR. HANLEY: We had that on there with Denver.

MEMBER: But put it in terms of how much safer is it to live in one place as opposed to the other. That is in a sense risk but it's a different terminology.

MR. HANLEY: Maybe we should move this to a COWG meeting. That should be a COWG issue.

MR. WASHINGTON: I agree with Jeff. What

we've got to keep remembering as James keeps telling us, we aren't writing this report for us; we've been working with this now for more than two years. We are writing it for the general public and let's do everything we can to make sure that the general public understands it. He has just given you some great information. You know, he is having trouble understanding it and he's been on it for two years. In relation to, you know, where you're taking a pill, yeah, people might know the dose that they're taking but they really in reality they don't really have an idea of what they are taking. So, let's make it as simple as we possibly can and don't forget what James has kept preaching to us. We won't be around to explain this if they have questions. Let the literature, let the document explain itself.

MR. BOX: Speaking again from not only experience; is each of the exposures that people are received there's a percentage of a body burden that they receive. In other words, when I received my exposure they told me how many micrograms I received. This really didn't mean a whole lot to me. I knew what the limit was but they also told me that I had received three body burdens. This really tells me something about what I had received. Now, for minor exposures you could say this is a tenth of a body burden or one percent of a body burden of this type of exposure. This gets right down to what a person can understand. I think this would be a good thing to really translate these things into, what percent of a body burden. In other words, a body burden would be the first place where you would notice health effects,

and you can say you're only receiving one percent or less or whatever it is for a particular type exposure.

DR. DAVIDSON: I have to announce that we are in our public comment period. As I had mentioned earlier that we would have to take a break and find out if there were any members of the public who would like to address the subcommittee. And if so, you step up forward to the microphone please.

MR. BROOKS: I have some comments, but it would be better to wait until the presentation is finished.

MR. LEWIS: I'll go back to what Charles was talking about. In my opinion, we don't ever define our audience. What we do is we have tendency to continue to play with ourselves. We miss the point that there's a larger audience out there and as Jeff indicated what does Munger say even as it relates to the EPA effort. What did Munger say? Have we, if what you said, does that counter act what Munger said? Because that's where the key is. The bottom line is if you don't do a good job in exposure and risk we run the risk of us being forced to hire somebody else to come back in and do it again, and that's what I'm tired of.

DR. CHARP: Last but not least, for the folks who attended several of the health assessment work groups we had some pretty interesting discussions on whether ATSDR should be using organ doses or whole body doses. These were some interesting discussions and when the

panel evaluated our methodology and compared our methodology to the methodology of the international organizations they said that the committed effective dose equivalent, the CEDE that ATSDR used, is appropriate for ATSDR's public health activities. They also said that if ATSDR were doing epidemiologic studies or if ATSDR were doing probability of causation then the CEDE would not be appropriate. What is appropriate, however, is if you're looking at specific isotopes that you know affect an organ and it's beyond a shadow of a doubt then you have to look at that isotope deposition in the organ. Where does that come in at? The thyroid. And which I have said in front of this panel and other folks before is when ATSDR evaluates iodine releases we will look only at the thyroid and not the dose to the other parts of the body. So, in essence, the panel, both the internal panel and the folks outside that, John Boyce and Charles Land, everybody agreed with the approach that we were taking, the dose limits we were using and so on. So, that's the results of the panel. Any questions on that? If not, I'll turn it back over to Jack.

MR. HANLEY: Back to the EPA letter, Region IV letter, there's one other thing I'd like to address before then I'll just open it up. But this is, on the second page, the second full sentence it says: Although EPA risk assessments and ATSDR public health assessments are not equivalent; EPA believes that ATSDR should be consistent with the Superfund risk range for both chemicals and radiation risk. And to respond to that one I would like to make a few statements here. First, if you look at our response to comment

number six, we mention the issue is that ATSDR should be doing risk assessment, ATSDR should be discussing why EPA's risk range for CERCLA sites should or should not be used, why does ATSDR use the dose criteria. Those general concepts of dose and risk, health assessment, risk assessment, comments were made. In response to this, if you look under the health assessments and risk assessments it says here; as explained in our public health assessments guidance manual, also as explained in the EPA risk assessment guidance for Superfund human health evaluations manual. Also, as it is explained in this citizen's guide on risk assessment and public health assessment. Basically, all these documents state the very similar thing, and that is that there are deliberate differences between ATSDR health assessment and the EPA risk assessment. In the Superfund legislation, in the CERCLA legislation in 1980, and also in 1986 when they amended the Superfund called SARA, Congress charted EPA; if you look at the legislation is very clear, that EPA is a regulatory and clean up agency. They clean up the sites; they regulate and clean up. ATSDR is a public health agency. It's very clear. And our approaches are different because each agency has a different purpose and goal in their assessments, and this is clearly outlined in this citizen's guide and also in the answers and the responses, I have detailed responses to compare the health assessment and the risk assessment. I'd suggest that you read these responses. We talk about the description of both, the purpose and the goals and objectives of both, and it's very clear; one is to set up for, the risk assessment is

a baseline risk assessment. It's used to estimate theoretical risk numbers to help risk managers to decide what remediation activities should take place. The health assessment is designed to provide environmental and public health agencies and the community with a conclusion about the actual existence or level of public health hazard polls by exposures to chemicals released from the site. And it goes down further for the goals and the objectives. The exposures that are evaluated are different. ATSDR evaluates past, current, and future. We look at realistic exposures, site-specific exposures that are likely to have occurred or did occur. And EPA in the risk assessment focuses on current and future. Their model is appropriate for protection as a prevention model. ATSDR's is appropriate model that focuses on the medical and the health perspective, public health perspective.

DR. CEMBER: Is it accurate to say that your agency is really looking retrospectively to see whether or not past exposure has done any harm?

MR. HANLEY: In some aspects, yes. We also look at the current.

DR. CEMBER: Yes, well, if it's done harm you would like to do something about it. In contrast to the EPA, who really uses a much finer measure for hazard because they want to set regulatory standards that would essentially assure that nobody would be hurt.

MR. HANLEY: Correct.

DR. CEMBER: So, they have two different purposes.

MR. HANLEY: Yes, and they look at current, future probabilities, theoretical risk, adverse effects that is defined by the regulatory standards and requirements.

DR. CEMBER: But the purposes of the two agencies are different.

MR. HANLEY: Different, yes.

DR. CEMBER: So, it's not unexpected to see that they would use different criteria for calculating risk.

MR. RICHARDS: A lot of this comment originated from my discussion with Elmer Aiken before he retired, and other toxicologists, and my understanding for chemical carcinogens you were using, at least in screening, ten to minus six, ten to minus five, ten to minus four values. So, that's where the comment originated from. And, again, I appreciate your responses, Jack and Paul addressed this before, and other issues, but that's really where that issue started and it was more generic than specific to this Oak Ridge Y-12 site. So, I've raised it to my headquarters and said is there any differences here that should be addressed at a national ATSDR EPA level to ensure that the public is not confused when we say arsenic chemical carcinogen is ten minus five probability incidence of cancer risk can we not say the same thing for gamma radiation from uranium? That's where the issue came from and

my understanding there was point blank from Elmer and other toxicologists in our office and other parts within EPA. Yes, for chemical carcinogens, that means for non adverse acute health effects, we do use EPA numbers, at least as a screening number. They may actually bring the number up higher or whatever they do, but that's where the comment originated from.

MR. HANLEY: If you remember with Karl when he mentioned the screening process and went through that process and in our guidance in the screening analysis internally the agency can use for carcinogens risk numbers to prioritize which ones to focus on. But when we make a public health decision, is this a health problem or not, we don't use those risk numbers. We look at each, in our guidance manual it says we use each, we evaluate each contaminant on a case by case site-specific basis, we weigh the evidence, as Bill mentioned earlier, we look at the literature, we look at the medical literature, the toxicological literature, we look at the doses, the site-specific doses, and we make a public health determination. And this issue regarding chemicals we will have at the PHAWG meeting on December 15th we are planning to have Dr. Alan Susten. He is the, what is his formal position? Assistant Director for Science within my division. He's been in the division for a number of quite a few years. He worked with EPA Region IV to develop this citizen's guide. He will be coming to the PHAWG meeting to get into that issue of ATSDR using the doses to make public health decisions and EPA's using risk assessment, and he'll discuss some of those issues at that meeting. So, we could have that discussion in detail at the

PHAWG meeting.

MR. BURT COOPER: I think the point Jon is making though is an initial screen for chemical contaminants we often do use EPA numbers or ten to the minus six risk for chemicals to fall out to see if whether we take them to the next level. I think that was the point you were making and yes, we can do that, we often do use the EPA numbers.

MR. HANLEY: You're talking about right here in the screening.

MR. COOPER: Yes, for an initial chemical screen in these initial areas.

MR. HANLEY: But when we make the public health evaluation, the final determination, we use a toxicological medical epidemiologic and other scientific evidence. We try to put those exposures and the exposure and the health implications of that exposure into perspective. That is the purpose of the health assessment, and we do it in a qualitative discussion, not you're above a certain range or below it and then if you have a problem or not we try to put it in a more qualitative format so that would try to put it in perspective.

MR. CRAIG: Jack, are we going to get a copy of that slide?

MR. HANLEY: Which one?

MR. CRAIG: The one that–

MR. HANLEY: Paul?

UNIDENTIFIED SPEAKER: I guess it's been a controversy for so long.

MS. SUSAN KAPLAN: Jack, I have a comment too. Recently, I read something that I think helps me understand the difference in the EPA numbers and the public health numbers and that's that the EPA has to, by law, clean up to a level that makes it protective for creatures like wrens and that helped me understand that they are more susceptible than a human would be. So, their number has to be more rigid by regulatory mandates or whatever to a more restrictive level and tell me if my understanding of that is correct, but that kind of clicked a light bulb for me.

MR. HANLEY: That could play a part; the ecology side could play a part. They use the risk assessment in making a determination, they have to consider financial costs, and can this be cost effective, the remedial operation. They have to consider the ecology, the birds and the bees you might want to say; and then the human health side. And part of making those determinations and if you look in their guidance and in the legislation they're supposed to use the health assessment part of their baseline risk assessment. There's a line item in there in that risk assessment where the health assessment is supposed to come in and provide some advice, additional advice, on the health effects. So, they're supposed to consider all those things. But the risk assessment is a tool to help risk managers make a determination

about clean up levels, or if the site should be cleaned up or if there is not a problem. They standardized the process so that it can be used across the board in a regulatory manner.

DR. DAVIDSON: I think we should also remember too is that whether you selected ten to the minus four, ten to the minus five, ten to the minus six levels, you know, for risk as acceptable for whatever; this is a policy. You know, I have not come up with a scientific basis for that. It's what we consider policy. If we clean up to this level then we consider it to be safe for now and in the future. So, it's policy. I think it's what EPA calls science policy, if I'm not mistaken. They do have science policy.

MR. HANLEY: I guess, James, you have a question or comment.

MR. LEWIS: I'd like to hear from Jon Richards from EPA. I would prefer for him to explain the role of what their agency does versus ATSDR. I'd just like to hear from him.

MR. RICHARDS: I don't think he's said anything we would disagree with. Again, we may disagree on the levels used and again, that's why I've addressed it with headquarters because it's outside my expertise on chemical risk range, but everything he's described I have no disagreement with. I never had an issue between, or we didn't have an issue between ATSDR public health assessments and Superfund risk assessments and sometimes I know my comment got confused and it may have got confused

between the two but again, I was just going back to my original discussion with Elmer who retired back in the spring when this came out. And we took a survey of other regions to see if ATSDR had applied this consistent that they had. It was my understanding; again, it was a little bit inconsistent between radiation carcinogens and chemical carcinogens. I know they have a basic disagreement with that and I think our headquarters should address as much as their headquarters. So, we don't have any confusion with the public. Superfund is looking at risk range thirty or lifetime; they're obviously looking at a seventy year lifetime. So, that has to be clear when you are looking at making sure you're comparing apples to apples. And the way Paul put those numbers out that was for seventy years but you just extrapolate it from thirty to seventy. But we're looking at ten to the minus six, risk screens go to ten to the minus four; that's approximately equal to fifteen millirem for approximately ten or so radionuclide at a common DOE site. It's not a one to one ratio; for that approximation we had an officer guidance. That was the guide sites and their clean ups so we don't just go for the upper end of the risk range to clean up; many sites at Oak Ridge, the one I was on this morning at another meeting, this one time ten minus four cumulative risk for both radiation and chemical risk and from there we back calculated the Pico curies per gram and whatever else they calculated.

MR. HANLEY: James, in response and to add a little more to what Jon is saying, this document, as I said before, was prepared by EPA and ATSDR. Elmer was in the middle of working with this document.

Also, you had the State of Alabama, Florida, and Georgia state health departments and agencies were involved also. So, this, I think, is a good comparison; it kind of gives you an outline of what the differences are. Also, as we outlined in our responses, we put very detailed responses, and these responses come, this material comes out of our guidance manual, this document and EPA's risk assessment human health evaluation manual. So you may want to take a look at this to help you see those differences.

DR. DAVIDSON: Al.

MR. BROOKS: This is what I call my de ja vu all over again speech. On lower East Fork Poplar Creek, 1989, December, it was declared a Superfund site and EPA became active in it. We went through a period of several years where the DOE and the public had one point of view on the levels and EPA had another. We got very unhelpful answers. Namely; it's the law, we have a regulatory policy. Finally, after a lot of pressure, Elmer Aiken explained that technically the Oak Ridge public was correct, but and then he explained the EPA objectives, policies, and the methods which they operated, which served a great deal to clarify the problem. I do not believe that this difference between EPA and DOE and the Oak Ridge public was ever resolved. We more or less went to the mat on the thing with public meetings and public comments in large numbers, and it seems to me that we're entering into the same situation here with respect to the Uranium levels. EPA has not responded in any definitive manner; their latest response suggests that they concur in the

final conclusions but someone up in Washington has some reservations that need further discussion. I'm not going to go into the details of things but these things seem to center around two things; one is ATSDR doesn't use the same exact methodology that EPA uses and Jack has addressed this question; there is also the Office of Radiation and Indoor Air made it quite a bit about subjective uncertainty analysis and that question has an answer. Presumably these estimates have been made with conservative values and them certainly then should give more conservative answers than uncertainty analysis would come up with. I don't think this question that EPA has with large segments of the risk analysis world is going to be resolved here in Oak Ridge and I do not think that the ORRHES forum is an appropriate place. As Jon suggested, this should be discussed at a higher level meeting and on general terms, not in terms of specific requirements of a specific site. Let me just ask you to read what I have written and tell you that I believe that ORRHES has to move ahead based upon the evidence that it has, the discussions that they've heard, the remarks that they've had from EPA, without waiting for a resolution of the differences between EPA and ATSDR. They need to move ahead and make whatever kind of recommendation they see fit with respect to the uranium analysis. Thank you.

DR. DAVIDSON: Thanks, Al.

MR. RICHARDS: If there is anything else regarding EPA now is the time to speak.

DR. DAVIDSON: I would just like to make a

comment. It's that the way EPA has handled the comments for this document has really caused problems in the community and I would like for EPA to assess, you know, what they're doing. You know, the comments are fine but not in such a way that they're going to have a negative impact on this subcommittee as well as the community and I think they should take that to mind because, as far as I know, the people from this office and headquarters have not been to Oak Ridge. If they're going to put this out they need to come to Oak Ridge and feel the heat and see the people whom they are impacting because otherwise I think they should get their act together and do this in a different way so that it does not have the negative impact that this has had. And this is a great concern to me because we have to move on; we've got a lot of things that we have to do but if we have to keep back stepping because of EPA then it's going to cause just more problems in the future.

MR. RICHARDS: I'll respond to that. First, I have taken a lot of criticism inside, Jeff Crane and I, and obviously outside and never again will we put out comments separately. That's not been our practice ever within the Superfund Oak Ridge documents that Jeff Crane is in charge of; this is one case it did happen and I take full responsibility for that; it will never happen again based on my own management, based on this committee. Normally, it would have come out all together through my comments. Second, yes, many of ORIA have been to Oak Ridge like all other DOE sites and just because their comments were critical and I think they were just technical

comments in nature that Jack has assured me that they are going to get with them to address and there may be a point where they just agree to disagree, and that's fine. I think that could have happened months ago. There's always going to be that even when they're Oak Ridge, Savannah River, Paducah, Maxi Flats, other documents that we have; sometimes it's criticism, sometimes we disagree with the method, we don't disagree with the overall that there's no apparent public health hazard; I have that in my comments in writing. But that doesn't mean that we agree with every approach that ATSDR does, and I think a lot of that can be worked out, again, with simple contact between the two of them. And, again, I apologize that these comments came out separate than our Region IV comments and I can assure you that will never happen again or I won't be working at EPA anymore.

DR. DAVIDSON: Ok, I'm not criticizing the comments; I'm just criticizing the way it was handled, because EPA has a right to make their comments. It was just the way it was handled between the two offices; that was my problem, not the comments themselves, but the way it was handled.

MR. RICHARDS: That all goes back to me because their comments were all, didn't necessarily originate from me but we often use our headquarters whether it's from Superfund or radiation expertise to either back up, in this case my three pages compared to their thirty pages. Obviously, they went way beyond what I commented on. That's not unusual for

me to encourage them to comment on the document or from Region 10 Seattle to get help on a Hanford document. Again, unfortunately, I did not put these all under one signature and that's why you can have the criticism as you have.

MR. LEWIS: We have work groups, we have PHAWG work groups, and I think that this was designed primarily because this is a high involvement site, I would like to know or see EPA and the other liaison members, I know Ms. Vowell comes out and Chudy at times, but if you're not involved in the work groups where issues are being addressed, and we used to talk to Elmer about this, I think it's hard to stay abreast of what you're doing. If we put forth all of this effort here, do they provide you with the time to either call in on the work group meetings to stay familiar with this so you'll know where we're going before we get to these types of issues?

MR. RICHARDS: When I was taking over this liaison from Elmer I asked very specifically has he ever been involved in the PHAWG groups and he said no. And I said well, there are a lot of these issues, just what you're saying, it looked like it would be beneficial to be a part of. So, I'm perfectly willing; I've been getting the e-mail since I've been on the committee since June. Not all the meetings I can obviously get to but some I can; at least I can get to by conference call; I know they're usually at night, on Monday night. So, in the future, especially with White Oak Creek coming up and other ones I will do my best to be a part of it. Again, I missed the last meeting; this is very high priority but so far I have not been told this is my highest priority. So, when

you have two conflicts and this only comes on one date.

MR. LEWIS: Should that be extended to your friends in Washington?

MR. RICHARD: No, they will not comment unless I ask them in the future.

MR. LEWIS: I mean, as far as listening in on the PHAWG, that's all I'm saying.

DR. DAVIDSON: Thank you, Jon.

MR. HANLEY: If you could review the summary comments and let me know if there is any particular one that the subcommittee is interested in and we can discuss. There was so many, like Jon said, there was thirty something pages, EPA summarized these basic comments, and if there's any that the subcommittee wants to go over, if not they can review this material at a later date, but instead of covering each one of these.

MR. RICHARDS: I do have to go, I have an urgent meeting back in Atlanta, but any of these that come up I will be having a conference call with Elizabeth Cotsworth tomorrow, Head of ORIA, at 2:30. So, just let me know any of these that in particular the subcommittee would like addressed or if EPA thinks ATSDR has addressed it adequately or any other issue. And I think you were going to have a conference call with them shortly after.

UNIDENTIFIED SPEAKER: Well, we're going

to put in a call to them. Kowetha sent a letter to Elizabeth Cotsworth. Did they have any comments?

MR. RICHARDS: Yes, it went out the 21st. They did not receive it until the 25th when I received mine. Obviously, that was the Tuesday before Thanksgiving. When I finally got a hold of them yesterday and this morning, again, they're looking through the comments now to see what issues they still think they need to talk to you about, the detail technical issues. But, again, if there is any the subcommittee had from these; again, this was part of my organizing their comments, getting them to summarize the main points.

DR. DAVIDSON: Are they planning on responding to the letter?

MR. RICHARDS: Yes, but again, you sent it out late Friday the 21st.

DR. DAVIDSON: I'm not saying when, I'm just wondering if they're planning on responding to the letter some time between now and our next subcommittee meeting.

MR. RICHARDS: Yes, it's in the letter to respond and they plan to respond.

DR. DAVIDSON: Ok, thank you.

MS. KAPLAN: Jack, could you talk about number three and number eight? I think they kind of go together.

MR. HANLEY: Number three and number

eight. Here you go, Kowetha. Number three is that they believe that we underestimated the radiation dose for the inhalation pathway. This is primarily with the past exposure. We used, as I mentioned, the State of Tennessee screening evaluation of Y-12 Uranium releases, also K-25 Uranium releases, but we focused on the Y-12 Uranium releases. And just to give you a little perspective on it, the state had those, that dose reconstruction was conducted under the oversight of the ORHASP panel, that's the Oak Ridge Health Agreement Steering Panel, they had technical experts and community experts. Also, the state oversaw that operation conducted by Chem Risk. The state then had that study evaluated by a peer reviewers and then ATSDR took the final document and had it technically reviewed by some outside experts. And the reason I'm going through all this is that this document was thoroughly reviewed. Our review, we asked the technical reviewers, there were four of them, we asked them to determine if the Task 6 screening evaluation provides a foundation on which ATSDR can make public health decisions and actions, and particularly it would help us support our public health assessment mandated activities. And our expert panel that reviewed this, they found the report to be technically sound and applicable to decision making, it conformed to established and general accepted techniques, and overall they agreed that the screening assessment is adequate for public health decision making. However, they did note that if there was a need to go beyond screening then you would have to do more, a lot more, with uncertainty analysis, more investigation to do a complete dose

reconstruction. And that was their basic finding. What I'd like to do here is I have a summary of what the technical reviewers said, who they were, and it describes their basic function.

MS. KAPLAN: But what does EPA say? What is the difference in what you did and what EPA is saying you should do?

MR. HANLEY: EPA's comments were that we should go back and do a full dose reconstruction using uncertainty analysis, sensitivity analysis, do more research, evaluate the air, redo the air monitoring, check all that out, and do modeling for dispersion and just do a whole new dose reconstruction.

MR. MALINAUSKAS: Let's see if I understand this correctly. EPA agrees with the bottom line?

MR. HANLEY: Not for past.

MR. MALINAUSKAS: Not for past.

MR. HANLEY: EPA Headquarters does not agree on the past, conclusions on the past.

MR. MALINAUSKAS: But the letter does not specify whether it's past or–

MS. KAPLAN: That's where the whole controversy started.

MR. MALINAUSKAS: Now I am confused. But my impression was that EPA's position was the bottom line is correct except

what you say is a high degree of conservatism is not correct.

MR. HANLEY: Yeah, they do say that; they do make those points. But which EPA? That's headquarter's comments. Region IV concluded with the findings.

MR. MALINAUSKAS: But I'm still worried about the bottom line. The people in Scarboro have been told by the Nashville Press that it's unsafe to live there and does EPA concur with ATSDR's statement that it's perfectly safe to live there as anywhere else in the area?

DR. DAVIDSON: EPA doesn't have that information.

MR. LEWIS: What does the letter say? The letter says on this paragraph right here, this is interesting to me, I think it's the second paragraph. Read that second paragraph. But what do they link it to? They actually link it to the efforts that ATSDR's public health assessment confirms the conclusion from EPA's sampling study of Scarboro area that there are no public health concerns to the community. From their efforts when they went over there to take a look they completed their efforts I think they were looking at the current conditions, help me now, they looked at, right, but they were brought in for the purpose of doing what?

MR. HANLEY: Validating.

MR. LEWIS: And FAMU was there for what purpose? To the best of my knowledge, they were there to look at the current

conditions and that's why I was having problems in reading this. I think that's what they're saying. I'm not saying I'm right or wrong. That's what that says to me.

UNIDENTIFIED SPEAKER: Let me again put it in simple terms. Is EPA saying that in the past it was not safe to live in Scarboro but now it is? That's in terms that the public would understand.

DR. DAVIDSON: I don't think EPA has the data to draw that conclusion; they just disagree with what ATSDR has done. They don't have the data to draw the conclusion from; they just disagree with what ATSDR has done.

UNIDENTIFIED SPEAKER: But there's a better explanation in the next paragraph that says although EPA agrees with ATSDR that there are no apparent adverse health effects as documented in the subject report EPA does not agree with the dose or risk criteria. And that's, what they say is there is no effect but we just don't agree with your criteria for how you, I don't think they're arguing with the bottom line.

DR. CHARP: Jack, if I could put my two cents in. Just to throw another monkey wrench into everything, when I reviewed the EPA comments from ORIA my thoughts were that they disagreed with the entire modeling process that was used for the past exposures. Therefore, if they don't agree that the modeling was done correctly and the Uranium deposition was incorrect therefore the doses are incorrect, and that's what I think EPA, what that

comment says is that because we think the model is wrong, the depositions are wrong, and therefore the doses are wrong. It could be high, it could be low. What they did say is that they think Scarboro is not the sentinel community.

MR. HANLEY: Regarding response to summary comment number three, one of the things EPA suggested is that we modify some of the parameters we use and we should use some of their parameters. What we point out in our response is that the ORHASP and the state and the people doing the work, they worked with the local community members to come up site-specific exposure scenarios, parameters, and that type of thing, not to use the standard EPA default handbook assumptions. But even if you use EPA's default assumptions, the ones they suggested, they estimated a dose of two hundred and forty-two millirems over seventy years, they did. Ours was one fifty-five. That's still below our comparison value, and if you take their fifteen millirem and you convert it to seventy years that is still below their guidelines for clean up.

UNIDENTIFIED SPEAKER: So, they agree with the bottom line.

MR. HANLEY: That's what this letter says now, this letter. You're asking me about their previous comments or are you talking about this letter? We have not received any written comments from EPA Headquarters, from ORIA, regarding our responses. The only thing I received is this letter and I think Bob clarified it when he read although EPA agrees with

ATSDR that there are no apparent adverse health effects as documented in the subject report they disagree with our criteria. So, they say it in there; there's no apparent health effects.

DR. CEMBER: The criteria they disagree with is the five thousand millirems over seventy years?

MR. HANLEY: Yes.

DR. CEMBER: Did they suggest another one? The criteria?

MR. HANLEY: No.

MR. LEWIS: Does your management team expect another response out of EPA before you issue the document or are you satisfied with what's there? And maybe, you know, looking over at Sandy, do you plan to go ahead and issue this document based upon what you've heard as of this date? Do you plan to change anything that's associated?

MS. SANDRA ISAACS: We stand by our conclusion that there are no apparent health impacts from Y-12; we stand by that. And though they may disagree with our methodology as we've heard from Jon and others. We, at headquarters level, approach things different based on our different mandates and what we're looking at, and though we may not, we may have approached this differently, we stand by our conclusions and I don't hear them saying that they disagree with our bottom line, just that the method we used is not what they would have used. But we stand by our document and we

do plan to issue our document. We will attempt again to call ORIA and see, you know, we love to settle things when we can but we have different approaches.

MR. LEWIS: How do you manage this in the public's eye? You know, you can have your position, I guess, and we hear a lot of this, but in my opinion there is a major problem in the community. The lay public who has not been involved in this, you still plan to issue it in its present state or do you plan to do something to ensure that the community, the press, and the lay public understands your position?

MS. ISAACS: I believe that I certainly hope that the COWG will work with us to outreach in a way that helps the community understand the different approaches, but basically, the most important thing is to understand what it means to the people, the exposure.

MR. LEWIS: I'm going to say this and I'm going to be real pointed about it, is it COWG or DHEP? You have a health education group there and we do what we can here but what I'm trying to say is your agency has the responsibility, the way I read your manual, to provide the educational material so people will understand this. If they're not involved they're not here then we're going to create another mess for the community.

MS. ISAACS: I believe there's probably four, at least three functional units within the agency that have a major role as well as a COWG I think as far as outreach that you all provide, you all can help us shape, but yes, DHEP should be involved in this, the Community Involvement Branch

should be involved in this. We have an office, OPO, which includes the public affairs people that also have a role in that. I'm certainly not laying this on the PHAWG because you all can't, together I hope that we do a good job communicating our bottom line and what it really means to the people.

MR. LEWIS: One other comment is that when you get through looking at your document and as we've been talking about health outcome data, and I picked up a copy of your Paducah report, I've looked at some of your previous reports where you factored that into it. When you combine all of these things with these what I consider are negatives, they may not be technical negatives to the technical world, but when you start putting these things out in the public and you haven't dotted your i's and crossed your t's to the best of your ability, where does that leave us as a community?

MS. ISAACS: Let me clarify. The conversation moved on so I didn't go on, but let me clarify what the law says about health outcome data. It lays out the components of a health assessment and I think working with the PHAWG you all have helped us very much, given input into areas that we need to evaluate, but components of the health assessment are we look at the nature and extent of contamination; that's very much where EPA and DOE and others that have data are involved on that. We look at the demographics of the people, especially the susceptible populations, and very much we've got a lot of input from ORRHES, from our work groups about the demographics, susceptible populations, different practices, where people go, not

just the self assessment but fishing and things like that that may make people exposed or not exposed. And that goes together for a pathway evaluation. And you heard there that that pathway evaluation, you all, I have had very much input on that to determine whether it is a completed pathway or there's not a completed pathway. The law goes on to say if there's a completed pathway you look at the public health implications that are plausible at the dose of exposure. It then goes on to say that if that dose is at a level where there is plausible health outcome data, if our conclusion is that there is no completed pathway, by what the law says, we don't have to have health outcome data. If there's a completed pathway and it's not at a level of health concern we stop, we don't have to look at health outcome data. If there's a completed pathway at a level of health concern we look at health outcome that has a plausible link to that exposure dose. So, when Bill said there's a lot of leeway on whether we look at health outcome data some time if we hear what we very much gather health community health concerns that there's a perception that they have been exposed at a level of health concerns, we include information about that. It may be more toward health education to help put perspective on like the disease incidents or that sort of thing, but we have to be very careful when we do that. Because if we say there's not a completed pathway or if there is a completed pathway but it's not at a level where the tox, the epi, the medical shows that there's a plausible link, then our discussion has to be real clear that we're giving information about this disease but that we're not saying it's linked. So, we have to be real careful when

we discuss a health outcome that does not follow the level, the dose, that we have determined people are being exposed with. So, we have to be real careful about that. And those were two comments I started to say when we were having that but that is what the law says. We look at the health outcome data when there's a plausible link to the level of exposures that our pathway analysis has determined.

MR. LEWIS: Is your law the guidance manual or is it something else?

MS. ISAACS: That is actually in CERCLA.

MR. HANLEY: I have the guidance right here.

MS. ISAACS: But that comes directly from CERCLA. I'm sure it's reflected in our guidance manual but the elements of the health assessment, those five key elements of the health assessment, are actually listed in the law. And the key of health outcome data is a plausible link. So, when we for a public health service or to address a concern include health outcome data, as you've heard Dee say at the last talk, we have to be real careful about making sure that we're not saying it's linked to the exposure. We have to be real careful.

MR. LEWIS: Is that what you did in Paducah? I guess when I looked at some of your reports from Paducah that was included in that report?

MS. ISAACS: Right.

MR. LEWIS: And I guess when I read that, help me now, I guess you clearly stated that there was not a, I don't think there was a link, so my question is are you going to do something similar here or have you decided as a management team that that doesn't need to be done here based on the data your evaluation –

MR. HANLEY: I decided that. Let me explain.

MR. LEWIS: I'm asking her. Based upon your review of what has been done by the people who work for you, if you made that call, is that your stance?

MS. ISAACS: I believe that particularly because Y-12 has, the contamination from Y-12 has given segments of the Oak Ridge community such a bad reputation that they didn't deserve, based on our analysis which we stand by, that we have to be real careful if we get into linking the evaluation of health outcome data and this particular document. I believe that it may be more appropriate, we have a summary document that we're going to do at the end that looks at all the exposures, I think it would probably be more appropriate to do it later on in the process in our series of health assessment than to put it into the Y-12, to be truthful. So, I very much, Jack has determined that we're not going to link it in here and I think it's very wise because you have to be very careful, again, when you do analysis of existing health outcome data in a document that says there is no problem that they understand you're just giving general information or evaluation to kind of put in perspective the incident in an

area versus general occurrences. You just have to be very careful on that.

MR. HANLEY: I'd like to respond to James' comment because this went on earlier and I didn't say anything, and this also goes back to Ms. Sonnenburg's question when I got up and I told her I'd get back to it, so this all will link together. This document does include health outcome data, ok, and I'll explain that. There's been a lot of public health activities in the past that have occurred. One of them, I'll just take for example the Scarboro community health investigation due to the community's concerns, the state of Tennessee and CDC did an investigation of the children. That was a concern and the agencies responded. This is documented on pages 32 through 37 and it's very clear what their findings were. Basically, the allegations in the paper were not born out by the investigation. Number two, also in this document there is the State of Tennessee did two statistics reviews which was descriptive epidemiology. Those are summarized in Appendix B. In the original draft we had it in the front of the document. Based on comments from the subcommittee, we moved them to the back; we left them in there. Actually, we were told to take them out but we left them in there. And the state conducted, this is on B7 and B9 in the document, they did a statistics review looking at the cancer incidents but they only had two years of data at that time. This was in 1992. And in 1994 the State of Tennessee conducted, they looked at the mortality rates in the Oak Ridge area for ALS and other MS and other outcomes, mortality, and that is summarized in the health assessment. Also, we summarized in the health

assessment in the early 1990's there were some clinical laboratory analysis that was provided to ATSDR, there were medical clinical evaluations that were provided to ATSDR, based on comments and concerns raised by a physician. The findings are summarized on page B3 and B4. All that analysis and discussion is in the document. Basically, we didn't find any, the case series, the documents that were provided was not sufficient to show any low levels of metals associated with the diseases. And then the State of Tennessee also reviewed the same material and came to the same conclusions. Now, that's historical; all that material is in the health assessment; it is in the appendices. Now, the other issue is the criteria that James is talking about in our health assessment and in the latest version it's actually called the final draft; it's still draft; it's in the final draft. This is the basic guidance that we have. We have to answer these types of questions in our health assessment. As Sandy said, it says losses; we have to consider an evaluation of mortality and morbidity data in all public health assessments. An assessment should include relevant health outcome data analysis when exposure to the site contaminants may have resulted in the development of health effects. So, here's the criteria: complete an exposure pathway. Here at Y-12, yes, we have that. We identified that. The timeline of exposure; we've identified that. Can we quantify the exposed population? The answer is we think for maybe the Scarboro community and some other areas we may be able to come up with some rough quantitative numbers of how many people were exposed. Sufficient exposure level or latency. Latency we have;

sufficient exposure levels, no, we do not have. Follow no, no health outcome data. The guidance says, James, that it's an analysis of site-related health outcome data is not scientifically reasonable unless the quantitative estimates of exposure show that there could be an outcome. It says no further analysis is appropriate.

MR. LEWIS: On what population are you getting your latency data?

MR. HANLEY: The latency would have been the years of exposure that we've determined where we have estimates of exposure during the 40's, 50's, 60's, 70's, 80's, and 90's. We have estimates of exposure for all those years by year, those years.

DR. DAVIDSON: I would just like to say is that we are involved in a cancer statistics review. Did I get that right, Pete? And I was going to say, this will provide health outcome data. That is not ready yet and this information will be incorporated and, as Sandy said, I think it would be more appropriate in a summary document because we have other types of contaminants that could be potentially of interest for that particular data and to put it in just one and I think it would probably be misleading. And we are in the midst of this and I think, you know, we should go on and let this study be completed, get the results so we can discuss it and go on.

MR. HANLEY: I'd like to cover a couple more of these, Kowetha, real quick.

MS. SONNENBURG: Put it in a drawer? What did you say?

DR. DAVIDSON: No, a summary document because the Y-12 Uranium may not be the only contaminant of concern that may be of interest for that data, and it would be best to put it into a summary document. Because we have other contaminants. We are in the midst of this; I think we should go on and complete it, you know, the information will be included in our public health assessment and there is no reason for us to keep going on and on and on and on about this one particular thing. It will be included but there is no reason to put it in each one of these to repeat this over and over again for each one of our public heatlh assessments by each contaminant.

MR. LEWIS: I just have a point. I don't disagree with you; my point is that when you form a conclusion without evaluating that and you make your final call I personally believe you put yourself at risk. That is the real issue that's on my plate.

MR. HANLEY: We did evaluate it. We did evaluate it.

MR. LEWIS: You haven't got the information back from Dee so how can you evaluate it? If you have, then share it with us. That's all I'm asking.

MR. HANLEY: Well, we evaluated this criteria and that's what I was going through to show you the criteria and I'm not quite

finished here. I said the exposure levels were not high enough; the latency, we believe, was long enough; the geographic area we could identify. The question, so we have a no here on the level, but also here we have health outcome data available for outcome of interests. What is the health outcome of interests for Uranium? Kidney disease, nephrology toxicity, but there's not a database out there that we can use in the geographic area on kidney toxicity. So, what health outcome should we look for?

MR. LEWIS: All I have to say to you is this and this is, I will agree with that, my point of reference has to do with what Charles and I talked about as we relate to this effort. We wind up in the community defending issues and I think if you can focus on the community for an instant all they know is cancer, and what I keep asking is if you can show that and then reflect that you don't have information on that, state that to them before you make the call, it makes your document, in my opinion, a lot stronger. That's all I'm trying to say. I'm not trying to get you to redo the things that you're doing. What I'm trying to get you to say it is important that the lay public be aware of what's there and what's out there. I did not read that in the document that you gave me. When I looked at the document from Paducah it was different and what I'm asking is that type of summary that you're talking about, if it was placed in that document, with those types of explanations, I basically wouldn't have an issue.

MR. HANLEY: Well, I have on my slide I'll

show you the changes we're making in the health assessment based on the comments we received from the public.

MR. LEWIS: Well, I haven't seen it so how do we know?

MR. HANLEY: I'm not saying that; I'm just saying I've not finished my presentation. What we're going to do is present a health outcome data section and explain this right here, explain this criteria, which ones we meet, which ones we don't meet. In addition, one of the things the guidance does say, James, and you picked up on this earlier, and that is that if there is a high enough concern for a specific outcome and stuff and there's a database available to go look at it and track it down and there's high enough concern and the subcommittee would say go out and look at this because it's a concern, even though we don't have an exposure and we don't anticipate exposure, if that's what they want, then we will do it. And that's the same thing with your cancer incidence review. A subcommittee has come to that determination through the ad hoc group which we went over all these issues last year, same types of criteria; we discussed all this in the ad hoc group. We brought all this to the PHAWG and this whole discussion came to the subcommittee in April and then also in August you all recommended a cancer incidence review and we're going to work on that. So, that will be stated in the document that based on the recommendation of the subcommittee we're going to do a cancer incidence review. So, we're going to talk about this criteria, we're

doing a cancer incidence review, plus we have the summary of all the other previous activities that were out there in the past and their basic conclusions, they're all summarized. So, if I can get to my last slide.

DR. DAVIDSON: Did you want to speak? Herman has had his plaques up for about half an hour.

DR. CEMBER: I just wanted to make a comment in the context of what you're just saying. I think that Mr. T.C. Mitz, who is otherwise known as the common man in the street, really isn't interested in all these details and the methods of analyses and so on. He only wants to know is it safe or is it not safe, have I been hurt or have I not been hurt. And although the thing that frightened me most about this is it says here; although the EPA agrees that there was no apparent, etc., the EPA does not agree with the dose or risk criteria, and I think it's utterly completely essential that all the differences between the ATSDR and the EPA be reconciled because if the common man in the street sees that two government agencies, each one of which has scientists on it are disagreeing with something, that's what will be caught here and that's what the newspaper reporter will write about. We have to have something that the common man in the street can understand and he can't understand disagreement among agencies and he can understand agreement. And as long as there's any disagreement at all no matter, even if the conclusions are the same, it's how did we arrive at those conclusions then that will lead to confusion and popular–

MR. HANLEY: If you could turn it around to the advantage and that's what I did in one of the responses. You have two different agencies, two different approaches, two different methodologies, two different goals and purposes; you ended up in the same spot.

DR. CEMBER: That's right, but this letter says the EPA does not agree with the dose or risk criteria and that's what the newspaper reporter will write about and that's what you will see in headlines, disagreement between EPA and ATSDR.

MR. MALMQUIST: Perception is very important and, as Tony said, the bottom line. We have an eight hundred pound gorilla, CDC, who says it may be wrong and nobody knows who you are, nobody knows who ATSDR is. CDC, yes, but perception of the public says EPA says we're wrong and it doesn't matter after that. You've got to change it. As Herman says, you either have to get rid of that part in the letter or we're in trouble.

MS. KAREN GALLOWAY: Did I understand you to say that before any health effect can be considered tied to a contaminant that there has to be a database, there has to be a registry on that particular health effect before it can be considered?

MR. HANLEY: For a descriptive epidemiology, a simple health outcome data analysis which we're doing, we call it a simple, it's called descriptive epidemiology. You can't prove anything either way; it just tells you the situation of what you are and how you compare to the state. That's what

we're doing with the cancer work. In those situations, that's what you use, you use a database. However, if we found where the exposures were high enough and we thought there was a health effect they would come in and do analytical epidemiology where it would take a tremendous effort but they can still go ahead and do it, but the dose would have to be high enough to show that there would be an effect. But, yes, we could do studies, even though there's not a database. They can go out, and if need be, they go door to door, they go get individual exposures, individual outcomes, and they evaluate that data. That can be done, yes, but the dose has to be high enough to consider something like that.

MS. GALLOWAY: There's a registry on cancer. There's a registry on birth defects. Is that correct?

MR. HANLEY: The birth defects registry is, I don't know if it's quite usable, but, yes, there is one in the state that they've been developing in the 1990's.

MS. GALLOWAY: Any others?

MR. HANLEY: There is your death certificates, mortality data, but we discussed in the ad hoc group and in the PHAWG and they recommended to the subcommittee and we discussed this previously, I think Dee touched on this before, is that cancer incidence data is much better data than the death certificate data because you can have misclassification and other problems. So, that's why we're focusing on cancer incidence because it's an actual count; they knew exactly what cancer it is; it's very specific, and the data

has quality assurance and quality controls on it. So, it's very accurate data, the cancer incidence data.

MS. GALLOWAY: It sounds like realistically it can only be one basically.

MR. HANLEY: And that's the one we're doing. Now, if we found high enough levels where there's a concern then we can come in, hypothetically, make sure it's hypothetically, if they found extreme levels of uranium in Scarboro, and they could define it and all that and they can do tests, biological tests, to test kidney function and all kind of stuff and they could come in and do all kind of studies, that's hypothetical. They could do that.

MS. GALLOWAY: But you would expect your higher doses would have happened in the past, I'm not just talking uranium, just any PHA that you're going to look at. Your end result that you have enough data to really back anything up would be cancer, right? You have a cancer registry that you could deal with; chances are you would not find doses high enough in the past, you know, to go do this big epidemiology.

MR. HANLEY: The cancer incidence review is, after we went through this with the group, is right now the best alternative until we find an exposure that would initiate any other further study. So, right now the cancer incidence review is the one that we are working on and we are moving forward on until we get an exposure that indicates there is something else we should go and track down.

MS. GALLOWAY: Thank you.

MR. HANLEY: Do you have any thoughts on comments on the cancer incidence review and what we're doing in this discussion and the criteria that we discussed?

MR. MALMQUIST: First of all, I'll update you; the request has gone into the state prior to Thanksgiving. I tried to get a hold of Dee today and she said she would let me know when we had a response back from them about getting the data and I have not heard from her. As far as the other databases, and I talked to Brenda Vowell and I got her to send me a copy of the reportable diseases, and it wasn't very clear so I couldn't reproduce it, but mainly what these are is infectious diseases. You have to report, as a physician, influenza, STD's; that type of information is reported to the state. The basis is not very good anyway, so when you start looking at things like thyroid disease it doesn't have to be reported. The incidental things like oh, there's a lot of thyroid disease, we don't know. The same thing with kidney disease; it does not have to be reported, so there is no database on most of those things that people would like to get. Then you get the problem we want to go and investigate it. Now, you're talking about patient confidentiality. And it is since HEPA went into effect, and that's the new thing when you get your drugs at the drug store you have to sign something, you can't give out anything. As my pharmacist said, if I go in and ask for my wife's medicine, he is not supposed to give it to me unless she calls. So, we've got a whole other level of bureaucracy on top of us now that we

will never get that type of information out. So, yes, the cancer stuff is the best thing we can have. Hopefully, we will be able to find it by county and this geographic area and that's the best we have right now and we aren't going to find the other stuff out.

MR. BROOKS: I'd like to speak to the point again on reconciliation with EPA. I agree with Tony these statements are not clear. EPA has had a history in Oak Ridge of delivering not very clear statements and when it came up to the end of the EPA sampling at Scarboro some of us attended a meeting with EPA and we had put pressure on them to make definitive statements, and we went to that meeting with two letters. One, giving them hell because they didn't make clear statements, and the other congratulating them for making clear statements. And after receiving undeniable statements, that they would make clear statements I tore up one letter and read the other. But don't believe, oh, yes, that's the only place we've ever had clear statements out of EPA, that this community is not dangerous. What you received is typical EPA of yesteryear, the vague statement half agreeing, half disagreeing. Can it get any worse? Believe me, it can get worse. On Lower East Fork Poplar Creek we had a rod, which after ATSDR had done its thing and declared it safe, they declared the land as being accessible without any restrictions. The first RER that came out that EPA got a hold of they change it, now they changed a legally binding document, to read that the land was conditionally accessible, including my farm. That gives you an idea of what EPA and its confusion can do.

You may go through a period where you got less agreement than you have now if you pursue this, so again, by the way, we stopped that one. And the people that did it aren't at EPA anymore either. I think if you pursue this question with EPA you're going to have severe delays. I think Kowetha said it very well and I would like to reinforce that; this community needs to move ahead and you'll just have to make your best judgment on what you've got, because God only knows when you'll get anything any better.

DR. DAVIDSON: Thanks, Al. And on that why don't we take a fifteen minute break. I think everybody here could use a break and then Jack will finish up when we come back.

(Recess)

MR. HANLEY: We sent out the comments back in late October; we had a PHAWG meeting, and one of the recommendations at the PHAWG meeting we presented the summary of the EPA comments like I just did earlier. And one of the recommendations was to summarize the main community comments so that it's concise and the subcommittee could read it and understand it. So, that's what I just put in front of you all and this is a summary of what the public, some of the public comments we received, non-EPA comments. And to conclude my presentation; after reviewing and evaluating the public comments, ATSDR made these changes in the health assessment; however, we have not changed the conclusion that the past and current offsite exposures of uranium posed no apparent public health hazard because the estimated doses

are not at levels expected to cause adverse health effects. Basically, we added more description about the wind directions, the closest residence, and the rationale for using Scarboro as a representative community for the City of Oak Ridge, which would have been the community likely to have been impacted. We removed discussion of the ICRP dose coefficient for uranium as a conservative aspect. We clarified our screening evaluation and the weight of evidence decision process and how we come to these decisions. We included some missing data sources, just identifying the references basically. We revised our Figure 9; that Figure 9 is the thermometer-graph that Paul put up earlier. We got input and we made some modifications to help communicate. We're going to add a health outcome data section specifically outlining the criteria and why health outcome data for uranium specifically was not, the kidney effects were not evaluated; however, we are doing the cancer incidence review based on the request of the subcommittee, plus refer them to the other sections in the document where we talk about the Scarboro investigation, health investigation, and also some of the other public health activities that I mentioned earlier. We added some new figures. One of the comments was about all the sampling that Florida A&M and EPA conducted, so we're adding a map that outlines all those points. And we're adding some other comparison documents to help communicate some of the toxic effects. These are the doses we estimated, these are ATSDR's MRL, this is what the MRL was based on, and then we have a little discussion in this to explain why we don't see public health effects. This is

based on dog studies inhalation exposure. A couple of those examples, and then we added an appendices in the back with briefs on some of the primary sources, descriptions of the data that we used, the sources, and it's a brief like we prepared once before for the subcommittee, explains the methods, what was done, what were the findings of each of those. And these are the basic changes. But the bottom line, the doses haven't changed and our criteria haven't changed and so our finding stays the same, and that's the main message.

DR. CEMBER: Is that what's going into the book or the final report? In italics?

MR. HANLEY: This paragraph? Yes, that's the final conclusion; that's the conclusion in the document.

DR. CEMBER: I just wanted to criticize that a little bit. It sounds weasel worded to me. It says it has not, current exposure pose no apparent public health hazard.

MR. HANLEY: Yes.

DR. CEMBER: That doesn't sound very convincing to me as a member of the public. If we didn't find any hazard I would say that we found that there was no illness due to releases from there or not just apparent public health hazard.

MR. HANLEY: Well, that's official classification.

DR. CEMBER: Yeah, but that's so weasel-worded; that may be your official one, but to present to the public that you did not

find that, that you found no health risk or no threat to health from the uranium that has been released period.

MR. HANLEY: Well, when we presented that actually in the brief, we ask is it a public health hazard and we put no. The community members have looked at that and they gave us feedback on that and they said it looks like propaganda; you're not explaining, you're not saying anything. What we're basically saying is that there's not a hazard.

DR. CEMBER: Well, that's the conclusion but then you have the rest of the report on which you base your conclusion.

MR. HANLEY: Yes, but when we gave those very clear decisive statements in our briefing materials that was considered, I think the word was propaganda that we were submitting.

DR. CEMBER: And they would think this is better?

MR. HANLEY: The fact that we say that there's no estimated doses of exposure at levels expected to cause health effects, yes. I don't know.

DR. CEMBER: Say at levels below which we've, at levels which we've never found health effects. But expected to cause, that means you're, again, that's weasel-wording that there may be but who does the expectation. But if we haven't found it, that's a definite fact. It's at levels at which we have never found health effects from.

MR. HANLEY: I like that. We'll see if we can use it. I like to be as definitive as I can but this is the language that comes out of the guidance manual; this is the language that comes in our conclusion categories that was mentioned earlier, and actually it was suggested that that's what we need to follow.

DR. CEMBER: You have to use the same wording, follow it blindly? That sounds very bureaucratic to me.

MR. LEWIS: I think what we need to talk about being consistent; I guess I was involved in that. Once you write those words that doesn't mean that you can't write another set of words over that that clearly, you know, explains things, but you can reflect a category. We were learning as it relates to that. We've gotten involved in looking at that; I think there's some comments coming out on the brief at some point in time; it may help that we'll have two types of briefs.

DR. CEMBER: Well, when I read that it sounded very weasel-wording to me.

MR. GEORGE GARTSEFF: Jack, could you just explain a bit more about item one, the additional discussion on Scarboro being representative?

MR. HANLEY: I'll use this map over here. This is Y-12 and Bear Creek Valley right over here. You have Pine Ridge runs along here and Chestnut Ridge runs on the other side. So, you have Bear Creek

Valley, on this end you have Union Valley, and what we basically are saying in the document is the comment from a couple of people said the prevailing winds inside this valley go up and down the valley, and we have wind rose data that shows it; very little goes in these directions, ok. The question was why did we choose Scarboro as a reference location and so we acknowledge in the document that the prevailing winds go up and down the valley; most of the uranium would have fallen out in this valley, Union Valley and Bear Creek Valley. However, no one lives in those valleys and no one has lived in those valleys since the plants were there. So, you look for, in a health assessment you look for a community that's likely to have been exposed and based on the state's evaluation, their modeling, which they used some simple modeling, they estimated that Scarboro would have been an established community that would have likely been exposed at the highest levels. So, that's why Scarboro was chosen. We acknowledge it, the City of Oak Ridge is likely to be the community that would have, the city that would have been exposed, the population that would have been exposed. Scarboro is being used to represent the whole Oak Ridge, so this area that we acknowledge is likely not to have been exposed to levels of health concern and the rest of the city wouldn't have. In addition, we did some additional analysis because some people were concerned about the gap here in the, along Scarboro Road here, and they were concerned about Woodland community. And so, to evaluate that analysis there's a monitoring station right here in Bear Creek Valley right at the end. This monitoring station

had, on average, over ten years or so, a twenty percent higher exposure than Scarboro, but it's in the valley right near the site. With one year being almost twice the exposure as the monitoring station here. So, we made the assumption that if you took the exposures here that they would have received and assumed they were here, we took the dose twice as much as Scarboro, and we added that for this dose here and it still would not have been a public health problem. So, these are points that EPA brought up and we discussed them with EPA Region IV. In addition to that, we have fly-over data that is used that's fairly sensitive enough to identify surface contamination if there would have been any deposition from uranium and any little elevated levels that came up during the fly overs that were checked by the state and DOE and they were found not to be of significance. So, we feel that these residential areas would not have been exposed to levels of health concern.

MR. GARTSEFF: This is one of the issues that ORIA had raised? Is that correct?

MR. HANLEY: Yes.

MR. GARTSEFF: Where do they feel would be more representative?

MR. HANLEY: They never say.

MR. GARTSEFF: They don't, ok. Is your re-write, in your opinion, is your re-write sufficient to refute their position that Scarboro is incorrect?

MR. HANLEY: We feel so and Region IV agreed. Now, what did ORIA say? I don't know; we haven't received anything in writing.

DR. CHARP: Don't forget the station, the one over there by the museum.

MR. HANLEY: Oh, also, where is the museum? Right around in this area, yeah. There's also a station here that we compared with Scarboro and it was much lower than the Scarboro releases for the years that we had. I forgot the percent but it was much lower so we had other locations too.

MR. GARTSEFF: Well, I just saw this as an opportunity given all the discussion we had before the break. Since ORIA is not telling us these details I think we should take every opportunity in the re-write to make sure that we bolster our arguments and poke holes in theirs to the extent we can and they're justified, providing of course they give us some clue as to what they think their answer is, but I believe you said earlier they would not be commenting further. Is that correct?

MR. HANLEY: Yes, they told the ATSDR staffer at the EPA Headquarters that they would not comment further but that was a few weeks ago. Now we have this letter; we're going to go back to them to get clarification and see if we can address these issues. This is one of the things that we suggested that, you know, I don't know if they know about Union Valley,

but Union Valley has, you know, commercial development and there's all up and down the valley, there's no one lives there, what other community they would recommend, especially in the fifties, when you didn't have this other portion of Oak Ridge up here; there was no one that lived out there. We have the maps from the fifties and stuff, so, you know, who would they say and we don't know; they didn't say.

MR. HILL: One interesting point, I used to service those air monitors; there were some other air monitors. I don't know if you found all the locations but I'll talk to you about that off line. The comment I wanted to make, when this committee first started one of the first couple meetings Mr. Manley asked us to be sensitive to the Scarboro community issues and I think Mr. Washington did too at different times. As I listen to the discussions, it sounds like we have the opportunity to point the finger back at Scarboro and say this is the worst place in Oak Ridge or to say, look, Woodland is potentially worse than Scarboro, which politically those are sensitive issues. So, I wanted to make sure we were sensitive to that and I appreciate Mr. Manley or Mr. Washington's comments.

MR. MANLEY: My basic comments about the uranium issue, as a whole, I am reasonably dissatisfied. Basically, what I look for was data that said that Scarboro is not contaminated above whatever minimum requirement that the government agencies required, and I think basically data from FAMU and EPA basically clears that up with me. I can't

answer for anyone else other than myself and sometimes I wonder whether I can answer for myself or not, but that is all that I wanted out of this, but we talked earlier about health effects. You know, we look at the thing, once you put a stigma on a community, more than health effects is at stake, socioeconomic and economic situations have a tendency to go either up or down. I think the socioeconomic effect of the newspaper articles and the negative comments that have been directed towards Scarboro have just about killed the community. No one will want to come back to live there. The kid that grew up out there will get out as fast as they can. At one time basically Scarboro was one hundred percent home owners, but not now, about anywhere from a third or a quarter of the properties is rental property now, and once a community starts being a rental property community everything seem to start, economically and socially start going down hill.

DR. DAVIDSON: I'm calling on people who haven't spoken very much today, you know, that's why I'm bouncing around, but I was going to get Susan next because I think she's only said something once and then it will be Peggy.

MS. KAPLAN: I had two questions. One is, Jack, you mentioned fly over data. Does uranium show up in a fly over because it's mainly alpha, isn't it? Is that going to show up?

DR. CHARP: The question was will uranium show up in a fly over. The uranium will not show up in a fly over; however, the

decay products show up like a sore thumb.

MS. KAPLAN: I see.

DR. CHARP: So, what they look for are the decay products and then they back calculate and if they see on the fly overs any, they call them one contour area of interest, they would go in and check that area to see if it was just an anomaly or if it actually is something there, but they can detect uranium decay products and they can back calculate it to see if it is uranium.

MS. KAPLAN: But the half life is very long, is it not, like billions or millions of years?

DR. CHARP: Well, 238 is somewhere around four and a half billion years, yeah.

MS. KAPLAN: So, is it really going to decay at a rate that's going to be meaningful to us in this short time period?

DR. CHARP: Yeah, because if it's naturally occurring, or even if it's not naturally occurring, some of the initial decay products will build up fairly rapidly so they can show up because there are some gamma emitters.

MS. KAPLAN: And the other question I had was you mentioned that the wind blows down the valley, has anyone gone in and pulled soil samples down the valley to see what those levels are as a comparison to test your hypothesis? No.

MS. ADKINS: I'd like to volunteer to take some people to do soil samples down the valley and to move the point of, I can't remember the word, suspicion or bad press to Scarboro, and move it to Bradbury, Dillis, Gallaher Road, and Crestwood, and that in our next meeting that we have a topographical map that actually shows, where you can actually feel the valleys and the ridges, and so forth, and see where those air currents really went and also an underground map that shows the underground topography.

MR. WASHINGTON: I guess the point that I want to bring up, and as Jeff said, the one I'm concerned about is do the air monitors pre-date the Clean Air Act. When did we put those monitors out there and the exact time that we went from a hundred percent production of UF6 to roughly ten, fifteen, or twenty percent production. If it is twice, if what we find is twice as much now when we're operating at ten, fifteen, or twenty percent, what was it when we were operating at eighty, ninety, and some time a hundred percent to the full capacity? You have to take into consideration too that a temperature inversion appears in that valley about most nights at 2:00 when you go out there you can't even see in that valley. And what happened to UF6 as it fell on the trees and the humus it was mixed in, water washed down hill toward Scarboro, what happens to this? For those of us who know a little something about the air monitoring; in my opinion, those air monitors were placed in a very scientifically suspicious position and I mean that to say that they were placed in a position where probably they wouldn't get too much of whatever was in the air,

because of the topography.

MR. HANLEY: A couple things. George, in response–

MR. MANLEY: In response to what, this is basically the type thing that I was trying to bring up. Now, basically, what I'm saying and what Washington is saying is like EPA and ATSDR, he's saying one thing and I'm saying another, so we basically contradict one another. Yes, contamination probably could have happened out there in the past, but with all the latest data that's been brought up, people, the water, the soil, and air sampling that has been done over the last few years have deemed that Scarboro is basically as clean as any of the surrounding areas. But when you keep going back and saying that there is possibility of contamination in Scarboro, you're just cutting the people that live in Scarboro's throat, socially and economically. I might be wrong about this, but this is just a basic feeling that's what you're doing. Every time you bring up that negative connotation you're just cutting our throat, but if you're right, you're right to say whatever you feel.

MR. WASHINGTON: I think you know me well enough to know that really I'm not so much concerned about the implications of whether there was more or less. What I do want the people to know in Scarboro is whether or not they were adversely affected or not. Now, irrespective of, you know, the reputation or anything else, home values, and all of the rest, the people have a right to know. And if we come out with a concentration of uranium

in the Scarboro community, under the law, you know, they will be affected by the law. I mean, they have to be bought out and then the government has to take over, give them a chance to leave that area, those who want to leave, but they need to know. If it was operating at one hundred percent you don't have to be a genius to know that you're going to get more fall out at a hundred percent than you would at twenty percent, and what has fallen on the ground becomes embedded in the humus and if you strategically place those air monitors, you know, I could because I know the wind patterns there, I know where I would place them to get the smallest amount of uranium that was released. Now, if you are not aware of some of the implications of science, perhaps, you wouldn't know that and you would go on and believe that the data that you've got is the correct data from 1942 until the present and that just isn't the case.

MR. MANLEY: Well, I guess I will have to agree that as far as SAS is concerned, I'm ignorant. Now, I used that word about myself because I don't have any scientific background so the science of it I'm just looking at the practical end of things. So, the science of it doesn't mean anything to me.

DR. DAVIDSON: I think what Mr. Manley is saying that Mr. Washington if you have some proof that they put those air monitors in places where they get the least amount, bring that proof forward; if not, you know, it's just supposition.

MR. CHARP: Kowetha, I would like to say one

thing. By no means am I an air monitoring expert, but I slept at a Holiday Inn Express. Many times when ATSDR has done exposure investigations, and I've listened to some of their discussion of it, they always seem to put air monitors in the area where they expect to see exposures. So, to me it would make sense that Station 46, which is in Scarboro near the community center, would be a good place to put an air monitor to see what fell on the Scarboro community. I mean, if there wasn't an air monitor in Scarboro and we had to rely on the air monitor in Claxton then I would say, hey, they put that ten miles down wind because uranium is not going to travel that far generally, so you wouldn't see any exposure. Is it possible that they put it in an area where they wouldn't expect to see much exposure? Yes. Is it a possibility that they put it where they wanted to see little exposure? Yes. Is it in a better area? Maybe not because that's where the community is located. I mean, I can see both points, but to me, like I said, I slept at a Holiday Inn.

MR. WASHINGTON: Well, seriously, the Scarboro community might not be the worse area. I mean, the worse area might be five or ten miles outside of Oak Ridge some place. We simply don't know because that would depend on a whole lot of parameters including, for example, the wind direction, the particle size, the density, and everything else.

MR. CHARP: Yeah, the wind directions for the valley are up and down the valley. If you look at the distribution patterns maybe five percent of the time the wind would go across the ridge and deposit into the

Scarboro area, but it did pick up something.

MR. WASHINGTON: But the temperature inversions do–

DR. CHARP: If it is a temperature inversion, most of that will stay inside the valley.

MR. WASHINGTON: The temperature of the emissions; there were emissions that are on record and, you know, DOE can get those. When there were emissions that were unplanned they know about them. They did that quite a few times and tried to put some of the blame on TVA. Well, TVA turned around and said, ok, we'll go out there when you're operating at a hundred percent, which was in May. They went out at night and soon Y-12 stopped looking at the emissions from the TVA stacks.

MR. HANLEY: In the dose reconstruction screening evaluation by the State of Tennessee they looked at dispersion modeling and they used the dispersion model that best fit the data that they actually had, and it indicated that the fallout would have been near the site and Scarboro was the community where there's actually people that would have received the highest dose. That's what the model indicated. The other thing is that Paducah, which we also evaluated, we have a health assessment on Paducah, the modeling indicates because it's uranium, heavy metal, it falls out near the site; it doesn't travel many, many miles away and it stays in the general pattern of the facility. And then also I just wanted to point out these are the air

monitoring stations that were used and also many of these monitors we have data from the mid 1980's through the 1990's and the operation slowed down, I think, in the early 1990's and then picked up again later. But during the 1980's we do have monitoring data and that's the data that we used and focused on when we made that assumption about the Woodland community and, George, in response, the written description of our response to EPA on this issue is in their EPA summary comment number two where we go through that.

MR. DAVID JOHNSON: Now, Jack, with regard to health outcome data, now, correct me if I'm wrong, in that quality of information is used to correct outcome data, something to that effect, is that correct, that you can change the health outcome data based on quality of information? That was mentioned earlier today, if I'm not mistaken, and it might have been Jack who made that statement, but I've turned my back to him and I'm coming to you.

DR. CHARP: You can't change what's in the data but you can alter how it's used, maybe that's what you're asking.

MR. JOHNSON: Well, that's with regard to the quality of information. Now, could you give me a definition as it relates to quality of information, an example of.

DR. CHARP: Ok, here's an example, let's say that someone is concerned about, I think its chronic lymphocytic leukemia, Herman, is that the one that doesn't have a radiation components.

DR. CEMBER: Yes.

DR. CHARP: Someone says our community has a high level of chronic lymphocytic leukemia and we're down wind from a nuclear power plant. All the data suggests, or actually strongly shows that there is no correlation between radiation exposure and chronic lymphocytic leukemia; therefore, that type of cancer you can discount from a radiation exposure. Likewise, if you, let's see, what's another good example, if you're down wind from a place that produces radioactive iodines and someone has skin cancer, no, well, let's not use that one because you could have some deposition on the skin; if you have a cancer that's not related to radiation or that the organ that is diseased doesn't have a component then you can maybe adjust it one way or the other. Radium, for example, is a bone seeker, so if someone has liver cancer and they've been exposed to radium then you may be able to rule out the liver cancer because radium doesn't accumulate to a high degree in the liver. So, that's how I would look at it. I don't know if that clearly answers your question or not. So, turn your back to me and ask Jack now.

MR. JOHNSON: I first have to ask Herman, was he being somewhat weasel-worded with that? Jack, I'll ask you about the quality of information; Paul tried but he passed it back to you.

MR. HANLEY: I don't know what this is.

MR. BROOKS: That is the cancer incidence of Scarboro that was obtained by the cancer institute.

MR. LEWIS: The data for Scarboro cancer incidence they said that numbers were too low. You know, in other words, that couldn't be used for quality. Somebody who is an expert in that can explain, that was information that was done by the joint–

MR. HANLEY: Is there a report on this?

MR. LEWIS: I found, that's the only copy that I have. It was in a report; I don't where the report is. I can tell you what I was able to find.

DR. DAVIDSON: I thought we were discussing quality of data?

MR. HANLEY: Yeah, you've mentioned this Florida A&M data.

DR. DAVIDSON: James, give this to Pete. This should go to Pete.

DR. CHARP: What's the question?

DR. DAVIDSON: I don't know what the question is; we were discussing quality of data, but this is not what we were discussing. We've gotten so far off the subject. This should be given to Pete.

MS. ISAACS: Can I answer David's question. Example of where there's problems with HOD data is where, for instance, they're duplicate records.

DR. DAVIDSON: We've discussed health

outcome data today; I think it's time for us to move on from that subject. This should go on to Pete's ad hoc group, any other questions and issues regarding this.

MR. JOHNSON: She's clarifying the quality of information as it relates to that.

DR. DAVIDSON: We are done with health outcome data for today.

MR. TIMOTHY JOSEPH: This isn't health outcome data, no. I'd like to address the air monitoring in Scarboro. That site was selected for the community in combination with our technical air monitoring people and the residents of Scarboro. Ideally, what you want is sort of the middle of a community which it almost is, it's not geographically the center, but it was placed there as a result of both looking at the community and where the best fit would be with the residents. Also, Scarboro is a very, very small community and there's not a lot of ridges or anything within the community and I doubt if it was two or three blocks left or right or north or south you could possibly detect an air quality difference in that small community. So, we certainly didn't pick that site so that it would be the least exposure.

DR. DAVIDSON: Thanks, Tim. I think we are at Barbara at this point. We're going to have to move on. We can give that to Pete.

MS. SONNENBURG: In your summary of public comments, at the very bottom, it says the report also neglects news

articles which I saw in the mid 1980's that showed three times the death rates for specific illnesses at Oak Ridge Hospital compared to the ones in Knoxville, and then I looked at your answers in the back and it refers to two studies that were done in the mid 1990's, ten years later, but it doesn't give any conclusions; it just said there were two reports done in the mid 1990's and I guess you can go look them up some place else.

MR. HANLEY: The health assessment. The findings are summarized in the health assessment on page B7 and B9.

MS. SONNENBURG: Did you find anything about the mid 1980's?

MR. HANLEY: The mortality data, they looked in the 1980's and the 1990's.

MS. SONNENBURG: No, they didn't, not according to what you said back here.

MR. HANLEY: It was conducted in 1994, but they looked back into the 1980's and 1990's.

MS. SONNENBURG: But you didn't find the newspaper articles to see what they were based on? At the bottom of the first page, number eight, the second paragraph.

MR. HANLEY: No, we did not look for the newspaper article in the 1980's. No, we don't have that newspaper article.

MS. SONNENBURG: You didn't find it.

MR. HANLEY: No.

MS. SONNENBURG: I noticed one thing–

MR. HANLEY: What I did is I relied on what the health statistics and reviews that were conducted by the state.

MS. SONNENBURG: One thing that you said was that the statistics of something weren't very accurate because they came from a wide area around Oak Ridge; that's also, it should be noted that the Methodist Medical Center draws from areas that are far removed from ORR. So, I guess that you're trying to say that anything that was in the Methodist Medical Center wouldn't be very accurate because it draws from a wider area. That's at the bottom of page eighteen.

MR. HANLEY: If you look at number seven, it says the report neglects, our report, our health assessment neglects to explain why the Oak Ridge population remains constant from the 1960's through 2000 time frame while the footprint of the Oak Ridge hospital zone quadrupled in size. And so, our response to that is there are many factors relating to the number of medical professionals in the community. ATSDR does not believe there's a correlation between the number of medical professionals and the health impact on the region.

MS. SONNENBURG: Oh, I could give you a better answer.

MR. HANLEY: Also, we said that the hospital,

Oak Ridge Hospital in the 1960's, which developed into the Methodist Medical Center, is drawing on an area that has grown in the rural areas and it's just drawing people from larger areas.

MS. SONNENBURG: I wasn't asking you about seven; I have several better answers than you have for seven.

MR. HANLEY: Well, fine.

MS. SONNENBURG: What about your response for eight when you say it should be noted that, it sounds like the statistics shouldn't be very accurate because Oak Ridge draws, the hospital draws from a wide area. I just wanted to say too that the employees in Oak Ridge come from a wide area. One of your councilmen here, Mr. Abitello, said that of the people that have been moving in the last few years into Oak Ridge to work here the biggest bulk of them don't live in Oak Ridge. So, you know, the fact that the hospital draws from a wide area, so do your employees and the people who work here.

MR. BROOKS: It is true that eighty percent of the people who work in Oak Ridge do not live here; they tend to live in Anderson County and Knox County most heavily, and the other counties to some extent, but the growth of the hospital is to the northwest and it involves three counties which are, I believe they're in the first ten of the counties in Tennessee as far as Tenn. care is concerned, so there is a health care problem up there. And these numbers come from Jen McNally who is the CEO of the Methodist Medical

Center.

MR. WASHINGTON: What was that number thirty, thirty-five years ago? Wasn't that just the opposite?

MR. BROOKS: Years ago the highest percentage of people lived in Oak Ridge, yes.

MS. KAPLAN: In regards to the newspaper articles it would be really difficult for Jack to go back and do that. They didn't go online until 1996, 1997. So, he couldn't just go do an online search. He would have had to go back physically paper by paper and that's really difficult. So, in defense of Jack here for that. I'd like to go back to the air monitoring issue that Mr. Washington brought up. You mentioned that the air monitoring stations were put up in 1980 and later. What were the operations level at that point? I know it started declining after that. When did the decline kick in?

MR. HANLEY: The decline was 1991, 1992.

MS. KAPLAN: So, you would have had some data at the higher operating levels.

MR. HANLEY: But that's what we have and that's what the ORHASP had when they modeled it over; they just used the data they had in the 1980's and the 1990's to get that conversion rate, what would have gone over, and they used that conversion rate from the 1980's and 1990's to estimate what would have been exposed in the 40's, 50's, 60's, and 70's.

UNIDENTIFIED SPEAKER: The monitors were

in place a long time ago; it's just the data.

MR. HANLEY: Yes, Scarboro, Oak Ridge. I'm getting out of here. I'd like to ask, Tim, James has brought this joint center data and I haven't been able to find a report or anything regarding this. Is there any way you can talk to the people that were in charge of that contract? Ok, thank you.

DR. DAVIDSON: Ok, we finally finished with this section and just some of the things that I can remember that we've discussed this afternoon primarily was EPA's letter, you know, and their comments on the PHA; we've briefly reviewed the PHA process in general and the screening process; we discussed issues on risk versus dose; air monitoring data; health outcome data; changes to the public comment document that will be in the final document as opposed to the public comment release that we saw, that we have already reviewed; and right now I think those are probably some of the large general issues of things that we've discussed this afternoon. There may be some more but I didn't get those written down. So, at this point we will go on to our next item on the agenda. We can try to finish up before so we can go home. As soon as I get my agenda out to find out where we are. We are with Bob Craig. Pete?

MR. MALMQUIST: Couldn't we also vote on the work group recommendations when they be given rather than go through all the work group recommendations and then come back and ask for a vote later?

DR. DAVIDSON: Ok, we can do that. Why don't we just go through the other work groups and do the PHA last then. Ok, we'll start with Communication and Outreach.

MR. LEWIS: We had one meeting in which we took a look at the briefing document. The briefing document is actually a summary of the public health assessment that we're talking about. What we were able to determine is we didn't think it was user friendly to the lay public and there's been some work that's been done on that and it looks like we're going to suggest or recommend there are going to be two documents; one that is a little less technical or plainer for the lay public to use and we're still going to try to stick to the other one which is a summary of that effort. I'd like to compliment Melissa Fish who I think led that. As Herman talked about, we reached out to the community to try to get some feedback and we found some things that you were talking about like the wording, whether or not it made any sense, and there's been some adjustments that are going to be made for the other document that we think will be user friendly to the public. That's the summary of what we've done and that will be presented at a later date.

DR. DAVIDSON: Any questions? Barbara, the agenda.

MS. SONNENBURG: We just had one meeting to work on the agenda and you saw the results of it. That's it.

DR. DAVIDSON: You did a good job.

Guidelines and Procedures.

MS. GALLOWAY: We had no meetings and have no recommendations. Thank you.

DR. DAVIDSON: Ok, thank you. Health Education.

MR. LEWIS: Health education? You mean COWG. Oh, needs assessment, you changed the name. We had a meeting with–

DR. DAVIDSON: Health Education Needs Assessment.

MR. LEWIS: Correct. I'm a little slow this afternoon. I didn't sleep at Motel 6, but anyway. The issue is that we had a meeting in which we had a discussion about where are we on the needs assessment. What we've done is we've looked at the issues, we put together a plan to try to go back and look for the weaknesses that were in the needs assessment and we felt like that, although the needs assessment was not acceptable, we felt that some of the components of the needs assessment would be useful to help us guide our efforts as it relates to communicating with the public. So, we talked about looking at holding a few focus groups along with things that Herman talked about when we talked about birth defects. We said we may want to make a recommendation about three key focus groups. We looked at utilizing some of the data from the various literature searches that we had to

help us identify what some of the older public concerns are and that's really centering around with Peggy; I want to make a special emphasis because of what happened last time that we really are suggesting that to go and get the relevant newspaper articles that you can pull down and pull out those issues and concerns, I think most of those will be focused on the Nashville Tennessean. And I want to make a public apology; I was not laughing last time in the concept about what you were saying because I respect, you know, all concerns that people have. We were going to look at the key informants, but the bottom line is we do have a rough plan laid out and we're waiting on DHEP to come back and tell us where they stand on that, but we are making some progress.

DR. DAVIDSON: Any questions? Bob.

MR. CRAIG: I think in your package you've been handed out the report of the Public Health Assessment Work Group. This is just meant to be a summary. If you need more detail there are very good meeting minutes that you can get from Melissa at the ATSDR office. We met twice since our last meeting and you can see that we did discuss a lot of what has taken up time here today. We felt that we needed to resolve the differences between EPA Headquarters and EPA Region IV comments and you will see that there will be a recommendation on that down below. At the first meeting we also discussed the need for PHAWG and ORRHES to go on record as concurring with the ATSDR PHA on uranium releases from Y-12, including ATSDR's extensive response to comments, and especially the conclusions of no apparent health

hazard from past exposures, and there are a couple of recommendations down below. At the second meeting the primary discussion in the beginning before Karl's presentation was did we really need to make a recommendation to ORRHES regarding EPA resolving their comments, the difference between Headquarters and Region IV. Since action had been taken by ATSDR and we were aware of it, Kowetha was writing a letter, and we knew it could have no effect on this meeting, we decided that we would bring the recommendation to ORRHES and allow the subcommittee itself to make that decision on that recommendation.

DR. DAVIDSON: Did we have a copy of this?

MR. CRAIG: I presume everybody got it and I thought it was in your packet handed out. Sorry, I was reading fast through it since it is almost 1:45. So, that's kind of a summary of what went on in our committee meetings and it did result then in three recommendations. And if everybody has them, I'll read the recommendations and then submit them as motions, and if we decide to go ahead with those, ORRHES can then consider them and I think we've had considerable discussions during today's proceedings. Recommendation number one, ORRHES requests that ATSDR request that EPA come back, they come back, with a definitive set of comments reconciling the original set of comments from EPA Radiation and Indoor to ATSDR and EPA Region IV on the Y-12 Uranium document prior to today; that was the recommendation of our group and that is a motion. The question was do we

really need this now. So, if the Chair goes along with me, it fails for lack of a second. Ok, this was something we decided and the committee did want me to present it in our hearings here but we think it's now; Al, do you have any more comment on that one?

MR. BROOKS: No.

MR. CRAIG: Good. Recommendation number two, resolved that PHAWG request ORRHES to concur in the ATSDR responses to the public and agency comments and request ATSDR include these responses in the final PHA document.

MS. KAPLAN: I just asked what exactly that means to concur in these comments.

MR. CRAIG: Well, the way I understood it, and this is the exact language that came out, I hope you were at that meeting, that we, as a subcommittee, concur that ATSDR has responded to the agency and public comments that were made on the draft and that their comments are sufficient.

MS. KAPLAN; But it's not saying we necessarily agree with everything they say; it's just saying we agree they have addressed them sufficiently.

MR. CRAIG: That was my understanding of what the feeling of the working group was. So, we're essentially saying that ATSDR has responded to the comments, each and every one of them, and we

concur in their responses on the final PHA document.

MR. MALMQUIST: I'll second the motion.

DR. DAVIDSON: Thank you, Pete. We may have to reword this just a little bit because this will have to be ORRHES concurs with and remove the part about PHAWG.

MR. CRAIG: Right.

DR. DAVIDSON: Because it's a recommendation now coming from ORRHES.

MR. CRAIG: Right, ORRHES concurs with the responses, ATSDR responses to the public.

DR. DAVIDSON: And so it will read: ORRHES concurs with ATSDR's responses to the public and the agency comments and requests ATSDR include these responses in the final PHA document.

MR. CRAIG: Correct.

DR. DAVIDSON: That's the way it reads now.

MS. KAPLAN: That still implies to me that we all buy into every single comment.

DR. DAVIDSON: No, I think we are saying that we agree that the, I mean if you want to change it to read that they've adequately addressed the comments.

MS. KAPLAN: I think that should be the wording rather than we concur.

MR. CRAIG: Is that an amendment or would you like–

DR. DAVIDSON: ORRHES agrees that ATSDR has adequately addressed the comments and that they should be put in the public health assessment document. It's just kind of a different wording but an explanation of the recommendation.

MR. CRAIG: As the motion, if that's ok with me and if it's ok with Robert's Rules and with the seconder..

DR. DAVIDSON: Is it ok with the person who second the motion?

MR. MALMQUIST: Yes.

DR. DAVIDSON: So, the motion reads that ORRHES agrees that ATSDR has adequately addressed responses to the public and agency comments and requests ATSDR include these responses in the final PHA document.

MR. MALINAUSKAS: I was questioning the word agrees, agrees with who? That would be ORRHES recognizes that ATSDR has responded satisfactorily to the comments as opposed to we agree.

DR. DAVIDSON: That's fine. That's ok. ORRHES recognizes that ATSDR has adequately addressed the comments blah, blah, blah, blah til the end. I won't go back and read it over.

MR. CRAIG: That's ok with the motioner and

the seconder, I presume.

DR. DAVIDSON: Ok, everybody ready to vote? Those in favor raise your plaques please. Fifteen. Those opposed? So, there are fifteen for; we've got no one against and no one abstaining. You may continue, Bob.

MR. HILL: We had one that didn't vote. That's not abstaining?

DR. DAVIDSON: Well, in the subcommittees I've been on, you know, because people will abstain because of conflict of interest and they will get it, or for personal reasons.

MR. HILL: I think we had one that abstained.

DR. DAVIDSON: Ok, we may continue.

MR. CRAIG: Recommendation number three, PHAWG requests ORRHES to concur in the ATSDR findings of "no apparent public health hazard" for the ORR Y-12 uranium releases and that this finding be conveyed to the ORR public in an appropriate manner. That's in the form of a motion.

DR. DAVIDSON: Do we have a second?

MR. MALMQUIST: I'll second.

DR. DAVIDSON: Thanks, Pete.

MR. CRAIG: Now, let's wordsmith it.

DR. DAVIDSON: I don't know who raised their

plaques first. We'll just start from that end and go around.

MS. KAPLAN: I think this motion is inappropriate.

DR. DAVIDSON: Why?

MS. KAPLAN: I just think that we are not here to agree with what they say; we are here to make recommendations and they do with it what they wish, but I just think we are not here to go rubber stamping this because probably not everyone on this committee buys into this.

MR. CRAIG: That's fine; don't vote for it. I think exactly our role is to say that we've been here all along and we concur in what they say and what their findings are; we've reviewed the data. That's my opinion and that's why I've made the resolution.

MS. KAPLAN: However, we had EPA who did have some disagreements with the past but they won't step forward now.

MR. CRAIG: No, and I think Jack has adequately to my technical level said that there is no effect in my opinion. I don't get to call; the Chairman gets to call.

MR. MALINAUSKAS: Oh, I'm just doing a little word smithing and say ORRHES concurs with the ATSDR findings of no apparent public health hazard and encourages ATSDR to convey this finding to the ORR public, etcetera, etcetera.

MR. CRAIG: That's ok with the motioner.

DR. DAVIDSON: I think what Tony has read is that ORRHES concurs with ATSDR's finding of no apparent public health hazard for the ORR Y-12 uranium releases and encourages ATSDR to convey the finding to the Oak Ridge public in an appropriate manner.

MR. MALINAUSKAS: That's correct.

DR. DAVIDSON: Herman.

DR. CEMBER: I would like to get back to weasel-wording and I would like it to say have found no threat to the health of the public, or something like that, rather than apparent public health hazard.

MR. CRAIG: As the resolver, I recognize ATSDR's need to use the official language so I would suggest that we then put a comma after that meaning that there is no threat to the public or something. Ok?

DR. CEMBER: It's ok with me, but are we required to use that official language?

MR. CRAIG: In the document but not here, but see, we're kind of quoting what they say in the document.

DR. CEMBER: Yes, but the public doesn't know what apparent health hazards are.

MR. LEWIS: That's true, but I agree with the concept of threat. That category is what I mean.

DR. CEMBER: Well, if this language must be used I would like to add parenthetically.

MR. CRAIG: Or just say thus there is no effect on human health, no threat to human health, thus there is no threat to human health. I thought what we got was comma, that's after the quote, thus there is no threat to public health.

DR. DAVIDSON: I will read what I have with the word smithing. What I have is that ORRHES concurs with ATSDR's finding of no apparent public health hazard, comma thus there is no threat to public health, comma for the ORR Y-12 uranium releases and encourages ATSDR to convey this finding to the public in an appropriate manner.

DR. CEMBER: Before we go on I have a question. We have this letter that says the EPA agrees that there's no threat to the health of the public; however, they disagree with something or other in there. Will that letter appear in the public domain with the EPA disagreeing with something?

DR. DAVIDSON: No, it's already in the public; it was passed out to the subcommittee. That puts it in the public domain. It's already in the public domain.

DR. CEMBER: Can we do anything about having the EPA change its wording so that they might say something like; we've arrived at the conclusion, both of us arrived at a conclusion that there's no threat to the public health; however, we arrived at it by different paths.

DR. DAVIDSON: We can't require that they do

that, but–

DR. CEMBER: Have we asked them to do that?

DR. DAVIDSON: When we have the conference call with them and I hope it's when I'm not out of town that will be one thing that I could ask them to do.

DR. CEMBER: And I'm just trying to avoid or prevent the use of the word we disagree, which is in that letter.

DR. DAVIDSON: Ok, I'm not sure; I think Jeff was next.

MR. HILL: I have a concern with concurs just as we did in whichever section it was earlier, one or two. Is there another word other than concur; understand, even agree to me is saying we're in full agreement with everything they've said. And with the EPA putting a shadow on it, I guess I'm looking for a weasel-word other than concur, that we understand what they're saying; we want that information out to the public.

DR. DAVIDSON: Concur is more weasel than agree.

MR. HILL: Yeah, that's why I wasn't saying agree. I was saying we understand or acknowledge, because that gives me a little bit more comfort with some of the debates that have gone on today. And maybe I'm the only one; that's why we're a committee.

DR. DAVIDSON: I guess the thing is is that are the subcommittee members comfortable with the conclusion themselves. Forget about what EPA has said, because EPA may not ever come back. I can tell you right now, they may never come back and give resolution to this. And so there may never be resolution on it. So, do we want to be held hostage to an agency that may not bring closure. Lewis?

MR. LEWIS: Well, I have a more basic question. How do we vote on something we haven't reviewed or read. Do we accept a word? How do you vote on something you physically have not read or reviewed?

MR. CRAIG: Excuse me, we have been through the document for a year. We just saw the conclusion on the viewgraph machine.

MR. LEWIS: The modified version I have not–

MR. CRAIG: We are concurring with the findings.

DR. DAVIDSON: The conclusion.

MR. CRAIG: The conclusions that were on the screen after a year of detailed evaluation and analysis and comment on the development of this document.

MR. HILL: I would say, I would be comfortable with acknowledge, but I'm not comfortable with concur and that's fine.

MR. CRAIG: The resolution, the motion that was put forward contains the word concur.

DR. DAVIDSON: We can vote on it as it is and then we'll go from there. And I will read it again so that everyone understands what it says. ORRHES concurs with ATSDR's finding of no apparent public health hazard, comma thus there is no threat to public health, comma by the ORR Y-12 uranium releases and encourages ATSDR to convey this finding to the public in an appropriate manner. All those in favor, please raise your plaques. Seven. All those opposed? Nine. So, the motion did not pass. There was seven for and nine against.

MS. SONNENBURG: Madam Chair?

DR. DAVIDSON: Yes?

MS. SONNENBURG: Excuse me, but an important vote like this needs a two-thirds vote, does it not?

DR. DAVIDSON: It didn't pass; it didn't get a majority.

MS. SONNENBURG: I know, but I'm just asking would it need a two-thirds vote?

DR. DAVIDSON: Yes.

MS. SONNENBURG: Ok, thank you.

DR. DAVIDSON: Jeff?

MR. HILL: I'd like to make a motion that we

accept it, take the word concur out and replace it with acknowledge.

DR. DAVIDSON: Was there a second for that motion?

MR. CRAIG: I'll second that motion.

DR. DAVIDSON: So, what I have with the changed wording, and let me know if this is correct, ORRHES acknowledges ATSDR's finding of no apparent public health hazard, comma thus there is no threat to public health, comma for the ORR Y-12 uranium releases and encourages ATSDR to convey this finding to the public in an appropriate manner. I have a question. When the public asks you what does it mean to acknowledge, what are you going to say?

MR. HILL: We are aware of it. We have read it; we understand it.

UNIDENTIFIED SPEAKER: We recognize that they have made some findings.

DR. DAVIDSON: That's not really saying anything. That doesn't really say anything; it doesn't mean that you've read it.

UNIDENTIFIED SPEAKER: It does say thus there is no threat to public health.

DR. DAVIDSON: Jerry?

MR. PEREIRA: I just can't sit down any longer about this. I'm really confused and I want you guys to help me. We sat down,

most of us here, for over a year or more talking about Y-12 uranium, talking about the work that's been done. EPA writes one letter without any substance and we're waffling. Now, I don't care how you vote. I really don't care how you vote, but we sat down with Henry Falk the day before Thanksgiving to go over this stuff and we have his backing to go forward with this health assessment. And I'm shocked to see what I'm seeing here. If you're telling me that all you can do is acknowledge I've read it, I've seen it; if that's your comfort level with this, then we've not done our job here. The agency has not done its job and/or EPA, the eight hundred pound gorilla, is flexing its muscles far more than it deserves to, in my personal opinion. I'm not talking for the agency now. I'm sitting here baffled at what I'm seeing, personally; I'm not talking for the agency now. I don't know what more ATSDR can do relative to this document and the work that was put in it. Now, if you don't want to acknowledge it, accept it, concur with it, that's fine, but I want to know what is it that you want ATSDR and the COWG and the NAWG to tell the community. If we can't get your backing on this we're done; there's nothing more we're going to do. So, I mean, think about it, talk about it some more, and I'll be more than glad to, you know, answer any questions that I have about this, but I'm confused by what's been going on for the years that we've been talking about this and the work that's been put in it at the PHAWG and at this session.

DR. DAVIDSON: George?

MR. GARTSEFF: To put Jerry's mind at ease, I

voted against the resolution because I didn't like the language of it.

MR. PEREIRA: Ok, that's fine.

MR. GARTSEFF: And I'm a little puzzled by all the attention on concur. I concur with it, personally. I have trouble with adding the phrase thus there are no effects. We're so worried about agreeing with it on the front end of the statement and then we add this clarifying phrase that blesses the technical conclusion in scientific language. So, which is it? Do we either agree with it or not? I think concurs is a safe word; I think we don't need to clarify the categorical description of no apparent health effects. And perhaps, if we just identified it as a category for the conclusion that might satisfy it.

DR. DAVIDSON: Barbara? I have something to say after we get –

MS. SONNENBURG: Well, I just wanted to say that I wasn't ready to approve it yet for two reasons and I'm thinking of making a motion to table it rather than defeat it.

DR. DAVIDSON: The thing about it if we don't come to a conclusion today on this it would not be here for us in February.

MS. SONNENBURG: Well, it could be brought back.

DR. DAVIDSON: To take any action.

MS. SONNENBURG: It could be brought back.

DR. DAVIDSON: No, the document will be out

before then.

MS. SONNENBURG: Well, I was concerned about what Herman said earlier about EPA. I really listened; you sort of retracted from the position, but what you said–

DR. CEMBER: I didn't retract, I–

MS. SONNENBURG: A couple hours–

DR. CEMBER: I do not wish to see disagreement between two government agencies.

MS. SONNENBURG; Well, you also said it would really be hurtful in this community and they'd probably listen to EPA more than us.

DR. CEMBER: No, I didn't say that. I didn't say that. But from other experience in other places that when two government officials disagree about anything whatever they say people don't believe either one of them.

MS. SONNENBURG; Well, I think that's very important and I think we need another month to work on EPA. And I also would appreciate having another month to get these cancer statistics which we should have at our next meeting because they might–

DR. DAVIDSON: But that's not part of this document.

UNIDENTIFIED SPEAKER: They may not be

here; they may not be here until April.

MS. SONNENBURG: Well, maybe. She indicated maybe.

DR. DAVIDSON: James? And then I have something to say.

MR. LEWIS: My point was real simple and it is that as an exposure evaluation you probably have done a pretty good job. I would like for at least Falk to understand that. My gripe has been is whether or not it is complete. Does it have the other components in it? And they may be minor in the eyes of some, but I think it is crucial for the public's benefit that that may be added, but I think a lot of good work has been done. I think it is the missing component that bothers me in voting for it. And it may, like I said, it may not be worth a whole lot.

DR. DAVIDSON: I'm going to let Susan speak and then I have something.

MS. KAPLAN: Although I do think it's inappropriate to put us in this position to have to give a yes or no on this, because basically we've become a PR mechanism for the agency, but also asking us to do this before we've read the final document, I think, at minimum we should wait until February until we've had a chance to look at what you've done with it. The other thing is people are never going to totally agree with what you've done, because you have a mandate to write a report without going and

doing the sampling that is truly needed to answer the questions. No, you haven't gone and tested downwind of Y-12, basically, to see if your hypothesis is correct that that's where it went. No, you haven't gone and done sampling in the other communities around, and that is because that's what the government has told you to do as its arm of doing this. So, it's not your fault, but is the report adequate, in my opinion? No, it isn't. There are a lot of holes. Have you done a good job given the constraints? Yes.

MR. PEREIRA: If you're holding out for EPA to have concurrence at the national level with this issue that – brought up, I just heard from Al Brooks; it ain't going to happen, folks. I would be shocked if it happens.

DR. DAVIDSON: So would I.

MR. PEREIRA: They have their system and their approach and we have ours, and never the twance on me, we use the terms of today; it's not going to happen.

DR. DAVIDSON: What I was going to say is that I think it would be best not to have anything, for the subcommittee to be silent than to put out recommendation that acknowledges that you have read the document; that's worse. I know, but I'm just making this, the subcommittee can vote the way that they, this is another motion that's on the floor. The first one was voted down, but when the public asks the subcommittee about this and the best we can come up with is that we have read the document; that does not

speak well for the year of work that we have put into it. Peggy?

MS. ADKINS: I'd like to go a little further than saying that we've read the document and add the words thus far or to date or something like that in this to show that with the findings thus far, you know, we agree with the findings thus far, but it isn't complete.

DR. DAVIDSON: I'm going to get Bob and then to Don.

MR. CRAIG: Just to respond to James and Susan. This is not a vote on the document or that we've read the final document, we agree with the final document; we've been involved in a process for well over a year; we've heard the way they've evaluated the data; we've seen the data; we've heard their arguments; we know how they develop their criteria; we saw their screening; all we're doing is now that we've gone through all of this very, very painstakingly in many, many PHAWG meetings and here that we agree with their final conclusion, that there is no apparent public health hazard. And EPA agrees with that as well. All we're doing, we're not agreeing with the document necessarily, we're agreeing with the final conclusion, and that's all that's being put forward here, that the final conclusion, and we've been there arm in arm, shoulder to shoulder, all the way through this for a year. And I think Jerry is right, if we say no now, let's disband this.

DR. DAVIDSON: I want to hear Don, because Don doesn't speak up much and I will always like to hear what he has to say.

MR. BOX: I think one of the most profound statements that have been made here tonight, in my opinion, is that if we can work into the document the statement that even though we've arrived at the conclusion by different methods, we do agree on the final conclusion that there are no health effects. I think if we can work this in, if ATSDR could work this in it would knock down a lot of this bad news that we've been getting from it.

DR. DAVIDSON: That's what it is.

MR. BOX: I think maybe if we worked this into recommendation number three it might help too.

DR. DAVIDSON: We can see how we could do that. Let me hear from Al.

MR. BROOKS: As the actions stand right now, you have passed a motion, essentially it was a vote of no confidence in the report. In other words, you had a motion to accept or whatever word and you turned it down. If that's the final action, that's what goes on the record. If you wish not to leave it in such a prejudicial fashion the proper thing to do is to make a motion to reconsider that motion and then table it. Otherwise, you are leaving in the official public record that you didn't have sufficient confidence in ATSDR to accept their work. So, I beg of you, don't leave it where it is; put it in limbo and where it cannot come back to bite you.

MS. SONNENBURG: I had indicated earlier I would like to make that motion.

MR. BROOKS: Jon Roberts is twirling in his grave.

MS. SONNENBURG: Madam Chairman?

DR. DAVIDSON: Yes?

MS. SONNENBURG: As a member who voted with the majority I have the right to ask to reconsider the vote and I move to reconsider the vote for the purpose of either tabling it or further amending it. And I hope my fellow members won't just reconsider and push it through; that's just a comment, but I'll make the motion to reconsider our vote and bring it back to the table.

DR. DAVIDSON: A motion?

MR. WASHINGTON: I'll second that motion.

MR. BROOKS: We've got another motion on the floor.

MS. SONNENBURG: What was the previous motion?

MR. BROOKS: The previous motion was we acknowledge.

MS. SONNENBURG: Oh, that was, you said no we couldn't. I don't know what happened to that.

MS. KAPLAN: It's still on the floor.

DR. DAVIDSON: That motion is still on the floor. Jeff?

MR. HILL: I was trying to feel the hand in my back. In the world I live in when EPA and another agency disagree and the other agency has contacts with DOE and it's pushed through and there's still a gray area, the news media can have a field day with you. I don't want to see us get in that position, but I will ask to withdraw my motion.

DR. DAVIDSON: Ok.

MS. SONNENBURG: May I make one further comment?

DR. DAVIDSON: Yes.

MS. SONNENBURG: I think it might work if we say that ORRHES concurs with ATSDR's and EPA's findings, because both of them had the findings of no apparent public health hazard, didn't they?

DR. DAVIDSON: Well, EPA doesn't have any official capacity to actually–

MS. SONNENBURG: But if we put that in there it wipes out all this business about, well, alright; it was just a comment.

DR. DAVIDSON: Pete.

MR. MALMQUIST: Do we have a motion to reconsider?

DR. DAVIDSON: Yes.

MR. MALMQUIST: Either vote on that or let it die; that's the first thing we have to do.

DR. DAVIDSON: I will take a voice vote. All those who are in favor of reconsidering the vote please say aye. Opposed? The motion is back on the floor. Pete?

MR. MALMQUIST: I have a comment, not about the motion, I have a comment, kind of agree with Jerry. We've sat here for a year, we've attended PHAWG meetings, we've done all this. We have seven more things to go through and we have one year, plus a cancer incident report. We have eight things to consider in roughly four meetings. At this rate, we're going to get one done. Now, we either vote on it and go on or go home, but we cannot fight over every word in every report for the next seven things. We're never going to finish this thing. And we've been told a year from now we have to be done and get the conclusion done. Either agree with it or go home. I've attended a lot of meetings; I don't agree with everything in there, but I think that there's enough evidence in there to concur or agree with what ATSDR has said about this report. There is no apparent health hazard from Y-12 uranium releases. That's all. It doesn't say anything about anyplace else, K-25, any other releases, or any other contaminant. But we have to come to some conclusion and end them. We can come back in February and talk about the same thing.

DR. DAVIDSON: Yes, we do have to come to a final conclusion. You're right, we have to come to a final conclusion and move

on, because we can't have this continuing to hang over our head.

MS. SONNENBURG: We could table it. I'll make the motion to–

DR. DAVIDSON: We are tabling it for what purpose?

MS. SONNENBURG: Because some people are not ready to vote on it at this time.

DR. DAVIDSON: Well, it won't do any good to vote on it at the next meeting; the document will be out.

DR. CEMBER: The fact is do we agree or not agree that there's no health hazard.

MR. CRAIG: That's right.

DR. DAVIDSON: What evidence do we have that there is a health hazard?

MS. ADKINS: Discussion time?

DR. DAVIDSON: Yes.

MR. ADKINS: Alright, I buy everything according to what's been done so far, but I don't think everything, every channel hasn't been evaluated, and I don't know if it ever will. I would be very willing to support this if we had the words thus far or if we had the words to date or given the research that's available. So, ok, then I move–

DR. DAVIDSON: We can amend the motion.

MS. SONNENBURG: Well, she was about to.

MS. ADKINS: Do you want to say something then I'll amend it?

MS. KAPLAN: I think EPA made the comment this is a report that's about Scarboro. I would agree to the statement limiting the report to Scarboro, but to say it didn't find the uranium. Where did it go? It had to go somewhere. So, yeah, I'll say that about Scarboro. This report is about that community; it didn't find the uranium.

MR. BROOKS: It fell out in the Y-12 plant.

MR. CRAIG: What uranium are you talking about?

DR. DAVIDSON: I think we've had a discussion on that as well. Is that uranium, you know, it does not travel very far.

MS. SONNENBURG: Could we hear Peggy's motion to amend?

DR. DAVIDSON: Ok.

MS. ADKINS: I move that the resolution say ORRHES concurs with the ATSDR findings to date, or findings of no apparent public health hazard, comma to date, for the etcetera.

DR. DAVIDSON: So, the amendment is to add to date after findings. So, what I would like to do is just for us to go ahead and take a vote on that.

MS. SONNENBURG: I'll second it to make it

official.

DR. DAVIDSON: Ok, those who are in favor of adding–

UNIDENTIFIED SPEAKER: Could you say that again please?

MS. ADKINS: ORRHES concurs with the ATSDR findings to date, comma of no apparent public health hazard for the etcetera, finish it the way it was.

DR. DAVIDSON: And what we're voting on is to add the words to date. Those who are in favor of doing that please just say aye; we won't take a plaques vote on this. Opposed? Oh, we need the plaques. Raise your plaques for–

MR. CRAIG: We went to a vote immediately, couldn't we have a little discussion?

DR. DAVIDSON: Ok.

MR. CRAIG: The point is this is a final report. We're not coming back to this issue again. The whole point to having ATSDR here is to evaluate all the data they go through to make a public health assessment and then to tell the public very clearly and straightforwardly whether there is or there isn't a public health threat. We need to move on; we need to find is there a threat out there. We're wasting all of our time on milking mice and trying to find it on something where there is no impact at all. Let's go find the one

where there could be an impact. Is it at White Oak? Is it one of our other contaminants of concern? Let's move on; we're done with this and we're not coming back to it. Don't leave the impression in anybody's mind that we are; we're not; it's over. ATSDR has come and it's going to go and we're done.

DR. DAVIDSON: Ok, those who are in favor of, oh, George, I'm sorry.

MR. GARTSEFF: The language from the EPA letter says: in accordance with the milestones of the Federal facility agreement the Department of Energy will complete a preliminary assessment/site investigation of offsite areas pending completion of the ATSDR PHA's. Any necessary follow on activities will be addressed during this assessment. Reading that that implies to me we don't have to mention anything about to date ,that the report is complete as it stands and there is a process in place to capture missing information.

DR. DAVIDSON: Those who are in favor of adding 'to date' raise your plaques. This is a simple majority vote. Five. Those who are opposed? Ok, five, eleven. Ok, so we won't add 'to date'; so, the motion goes back as before. Don, you want to speak? Oh, you're plaques is up. I think we've heard, you know, quite a bit of discussion on this issue. One, the public health assessment to go out will be a final document. It will not be redone. There can be additional follow-up actions, you know, at a later time, but this is it. For this we offer this document.

MR. JERRY PEREIRA: One more point and I know everyone wants to go home. This is not the first time that ATSDR and EPA has not necessarily reached a consensus on approach or even decision-making processes. Depending on what the agency and COWG and NAWG and PHAWG do, along with Jack's assistance and Paul's assistance, to put this on the street, the document is going to stand on its own, notwithstanding EPA's vague comments. With or without that letter the document is going to stand on its own and it depends on how we put that on the street, how we convince people that the document is meaningful to them in a manner that they understand. That's the key; that's the approach, and I want to apologize for being upset before but I kept on saying we didn't do our job here because we didn't convince you guys, at least not sufficiently enough, but that's what the point is. I just wanted to make the point about the EPA part and our part. This stands alone. We don't need EPA to be on our shoulder with this.

DR. DAVIDSON: I think one thing that James, I just want to mention that when we did our evaluation of this document when we got the red cover version we did not disagree with the final conclusions of that document. It only became recent.

MR. LEWIS: I guess I am very adamant. First of all, there's a lot of good work that's been done here and I tell you that my argument has to do with the failure to you laying out the process. I think it is a sound document; I think we've done a lot of good work here. I think that the

problem is, and I'm going to say it in words that I understand, and apologize, we've gotten into a bastardized approach to this effort. We broke this thing up into mini PHA's. We came in and what we've done is decided that we're going to do this health outcome data separately. We've gotten ourselves in a quagmire tied to somebody getting out a bean. My point is this is a sound document. I believe in this document, but what I'm having a problem with and I know that that is very small over there, but I do think we need to try to work through this. I hate to trash something that so much good work has been put into. Now, that is my personal opinion and there should be some way we could work through this.

DR. DAVIDSON: Well, James, you are talking about the health outcome thing but I think we have already discussed that before and I think, you know, that has been turned over to Pete.

MR. LEWIS: The EPA is not that much to me because I think there's always going to be something. I'm just sharing my opinion. There's going to be some disagreement. I think we can come up with a way on this table to get this through and I would like to see us get it through with some kind of caveat and I would make one other statement. If you open the document and you read through it, under the concerns, we have a comment there that we're going to address that as a part of something else. So, what Peggy is saying is if something else trips you're going to go back to it. Somewhere in here is a way to work through this issue because you've got it captured in that document and I am not against the document. I want you to

understand that. Do you hear what I'm trying to say? The words are in there but you've taken a system that you never explained to us, you've brought it before us, we asked you about the components, we're looking at the components. Let's try to work through this and, Bob, I'll turn it back to you.

DR. DAVIDSON: I should also mention that we're not voting on the document; we're only voting on the conclusion, not the document. We're voting, because our motion is the conclusions from the document, not the document, and I'd like to clarify that to the subcommittee members. You're voting on the conclusion. Lynda, do you have something?

MS. LYNDA LEWIS: Yes, something very brief actually. I am convinced, I have kind of watched the process from afar. I was more involved at the beginning than I am at this point and I have spoken with Melissa and Bill and I've tried to maybe kind of coming in on the end get back in touch with what's going on, but I will say that I think that credibility is going to be an issue because there is so much dissension and whether you agree or disagree, and I think I've said once before, you can have conflict without hostility and sometimes it appears that there is so much of that that even though you have very dedicated members of the subcommittee what appears is somewhat chaotic. There is a statement; if you don't have the time to do it right, when will you find the time to do it over. If you want to keep credibility or at least increase it, because there is a problem with credibility, then I believe that it's going to be necessary to look at how you will publicize, how you will disseminate the

information in this report. And if everyone agrees that the conclusions are sound, I think that there needs to be something that would deal with how you are going to convince other people that the process has been sound as well. And if they think it's been something that is forced, if they think it's something that people are grudgingly going along with, then you've wasted the time that you've spent. So, I would simply say to whatever extent you can spend your energies, once you get past this approval of the final conclusions of the document, your time would probably be well spent to look at how you are going to handle dissemination of this. The two things people remember are primacy and recency, the first and the last. If this is the first thing that they're going to get to see as a product of what your efforts have been, then I would just suggest, in whatever ways you can, work to have a smoother dissemination of information and try to look at as many different ways as you can to reach as many different audiences as you can so that the rest of your work that you have a year to complete will go more smoothly. I was given an opportunity to fill out the questionnaire that went with the brochure and I had to put in some areas that I was not convinced, it's not that I had evidence to the contrary, but there was some ways in which I was not convinced because there were things I believed you could say with certainty, which you did, about recent incidences. There were things that I thought were said with such certainty when the only thing you could do would be speculate and when you have those two things, it calls into question the accuracy of the latter if you feel that there has been in some ways playing a bit loosely with the earlier

information. So, that's all I have to say. I am in and out of town; I would like to follow more closely what is going on. I do commend the members of the subcommittee because I am convinced of the dedication and conscientiousness. I have not met anyone involved in this process that I feel is not well motivated, but I will say I think that the credibility that you and the ATSDR enjoy probably needs some bolstering.

DR. DAVIDSON: Thank you, Lynda. I think the large portion of our credibility will have to come from us and what we do after this document goes public, because we can either support our own credibility or we can blast our own credibility. We have one more person here.

MR. CHARP: Bob Craig mentioned that the document is going final and it won't be revisited. That's not necessarily true. ATSDR has always considered its health assessments to be quote living documents and in many cases we've had to go back after a health assessment has gone final and re-open the document because new information has come to light and that's the same case is going to happen here at Oak Ridge. So, just because the Y-12 document is going blue cover, or what we would call final, it's not final. More data could come in on Scarboro, maybe somebody would dig a pit in Scarboro and all of a sudden hit uranium metal, you know. So, the documents aren't final; they're just called final. They're always open for reinterpretation and re-evaluation of new data. I wish I could tell you how many times I've had to go back and look at stuff and one site comes to mind that I first

got involved with in 1988 and I'm still occasionally having to look at it. So, the documents aren't final; they're just called final. They always can be reopened and re-evaluated in light of new information.

DR. DAVIDSON: I wanted to get our vote before Susan leaves. Are you getting ready to leave? Why don't we go on and take our vote. You can say what you have to say while she's going to her seat.

MR. MALINAUSKAS: I was just going to say that maybe one way out of the impass is to modify the wording just slightly that ORRHES concurs with the present ATSDR findings of no apparent health hazard. But we concur with your present findings.

DR. DAVIDSON: Is that an amendment?

MR. MALINAUSKAS: I'll make that an amendment, yes.

DR. DAVIDSON: Second?

MR. WASHINGTON: I'll second.

DR. DAVIDSON: All in favor say aye.

MS. KAPLAN: And again we never really put to bed the EPA issue of the past and that was what was floating around is that headquarters disagreed with the word past.

DR. DAVIDSON: No, not the past; they disagree with the assessment for the past exposure, but the way they did it was they just didn't agree with the conclusion.

MS. KAPLAN: Of the current, wasn't it?

DR. DAVIDSON; No, they were having problems with our methodology for the past exposure. Ok, so, why don't we go ahead and take our vote on this. Oh, for the word 'present'. All iN favor say aye. Opposed? How many no's did I hear. Four no's. Ok, the ayes have it. So, it reads 'with the present findings.' ORRHES concurs with ATSDR's present finding of no apparent. So, all those in favor of the motion. We're going to go ahead because everybody is ready to go home. Please raise your plaques. This motion is ORRHES concurs with ATSDR's present finding of no apparent health hazard for the ORR Y-12 blah, blah, blah, blah, blah, all the way out to the end. Thirteen. Opposed? Three oppose. Ok, what's our percentage. Oh, that was fourteen for. Did I miss one. Two-thirds are here when we have quorum. Ok, so, the vote passed. So, we are finished with that. I would like to thank everybody for working through this. We just have a couple more things to do and we will be, yes. That concludes the PHAWG report. We just have a couple more things here. Jerry's update; and then Lorine will give us some information regarding committee membership.

MR. JERRY PEREIRA: I am handing out a before and after, the light blue background is the original time line, and I'll just review where we're behind. Mercury was due December 3rd; this is the one that Bill is doing. Because of approach and how he is working with the PHAWG and other folks, that's going to probably be in third quarter 04, the Mercury public

health assessment. White Oak Creek slipped one quarter to the second quarter of 04; and to clarify the point about the iodine, if you remember the original was the approach and data search that Paul talked about last time. We hope to have on the project plan for the next meeting an actual time line for PHA for iodine. We're going to determine that; Sandy is going to get with the FFAB staff folks and actually have a time line for the next ORRHES meeting for iodine. Everything else should still be on track. So, mercury is behind, White Oak Creek is behind a quarter. That's primarily because of review issues, all the goings on with Y-12, and the review issues back in Atlanta. As far as I know, Sandy, White Oak Creek is up at Henry's office, right? Dr. Falk's office? Ok, so, but it's still, we're still going to be slightly late with White Oak. I said more than I wanted to say before.

MR. LEWIS: Based upon what Paul said. Do you concur with what he said? You're the manager and I'd like to see that that's in the record verbatim.

MS. ISAACS: What Paul said about opening?

MR. LEWIS: About the final, about his definition of final.

MS. ISAACS: If new data are made available that would indicate that we need to go back and re-evaluate our conclusion category we leave that open. As a matter of fact, I started to come up to Peggy on her recommendation that we often say based on currently available data and I

think that might have gotten it. But if data were to be discovered in the box or something that says hey we need to look at this, we come back. This issue came up earlier, if new studies indicate that perhaps levels that were considered safe are no longer considered safe, we go back and look at that. Are we going to do a full blown health assessment just because any new data comes up in Scarboro, we're going to look if it's relevant and it might impact our health call, otherwise, we won't do a new health assessment. But I can give you an example of lead, lead at 50 micrograms at one time was considered safe; we did health assessments. New studies became available that indicated that really 10 was the level that needed to be, below ten, the values needed below ten, and we have a database that we capture the sites we've looked at. We immediately went back and go we need to re-evaluate to see if there's blood levels between ten and fifty to determine if we needed to make any, put out a new document that would indicate that. So, we leave it open in that fashion, but not just any new data means we start our process over.

MS. SPENCER: Ok, I think one of the last things on the agenda is about the nominations package that everyone has received. We talked a little bit about this in October and told you would receive a nomination packet in the mail and everyone sould have received theirs. There is also some information about being nominated for the subcommittee. Everyone who is interested and remaining or coming back to the subcommittee needs to go ahead and fill out the nominations packet. If we don't get a nominations packet

from you then we cannot consider you as a member for the subcommittee. The deadline for submitting your nominations package is February 3rd, so it's behind tab 6 and you also received it in your mailing when it came to you. So, everyone should have got it in the mailing and you also have one here behind tab 6. We do have extras here so if you know of anyone that you think would have expertise or would add to the subcommittee we encourage you to take a nominations packet with you. As we stated in October, they are really cracking down on renominating or having the same members on the subcommittee over and over again. So, we're going to submit everyone who is interested. We will submit your names. We have no control over who is selected and who is not. That will go all the way up to Washington, so they have really cracked down. We just had another FACA at Savannah River that they turned down everybody. So, we don't know what's going to happen. We're going to make a very strong case because we really don't want to start over with new folks with so much work that's been done and hopefully having most of it done with just a few PHA's left to finish in the year 2005. So, we're really going to make a strong case and I know that Dr. Falk has been very supportive of the subcommittee here in Oak Ridge so we're hoping we can get that done, but we can't guarantee that for anyone. Does anyone have any questions about that?

DR. CEMBER: Will we be getting more papers than what's in here?

MS. SPENCER: No, this is it. Basically,

Marilyn, do you want to tell them exactly what they need to submit?

MS. MARILYN HORTON: In the nominations packet there are five questions to answer and that's it. It's in the package. It's behind tab 6. There are five questions. Send a resume that has your name and address and current information on there.

MS. SPENCER: Under nomination procedures it has, in addition to the resume; please answer these questions concerning your nominee. What would be the person's participation add to the subcommittee, etcetera. So, those are the questions you need to answer, the nomination procedures, and then behind that is a page that says nominee attributes. So, it's important that you read that and respond to that in some way, and it has a contact information if you have any questions about anything as well. Everybody see that?

DR. CEMBER: If we nominate ourselves do we write it in first person or third person?

MS. HORTON: Either way you think might make your application stronger; it doesn't matter to us. Again, we do have extra nomination packets so if you do know of someone that you think adds expertise or would be very helpful to the committee and to the community we encourage you to do that.

DR. DAVIDSON: Unfinished business? Anything we need to discuss? New business? The next meeting is February 3rd.

MS. SPENCER: And I will also send in the post mailing a list of dates for the upcoming meetings for 2004, so I'll send it out by e-mail and also in the mailing packet because I know we have at least one member that doesn't have an e-mail address. So, if you can go ahead and put those on your calendar knowing that they're not set in stone and things may change based on PHA's but those are going to be the projected dates for our meetings in 2004.

DR. DAVIDSON: And I would also like for the work group chairs to use the format for submitting their reports to ORRHES just to give the subcommittee a general idea of what occurred in your meeting, and I think those were sent by e-mail attachments to each one of the work group chairs. Ok, if there is no further business for the subcommittee, I declare the meeting adjourned.

(Meeting was adjourned at 6:25 p.m.)

CERTIFICATE

I, JOAN S. ROBERTS, NOTARY PUBLIC AT LARGE FOR THE STATE OF TENNESSEE AND COURT REPORTER DO HEREBY ACKNOWLEDGE THAT THE FOREGOING 178 PAGES ARE A TRUE AND CORRECT TRANSCRIPT OF THE PROCEEDINGS TAKEN BY ME ON THE 2ND DAY OF DECEMBER 2003.

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JOAN S. ROBERTS, COURT REPORTER.