

**Oak Ridge Reservation Health Effects Subcommittee
Centers for Disease Control & Prevention
Agency for Toxic Substances and Disease Registry**

**Citizens Advisory Committee on Public Health Service Activities
and Research at Department of Energy Sites**

***Summary Proceedings
September 11, 2001***

Present in the 9/11/01 Meeting of the Oak Ridge Reservation Health Effects Subcommittee (ORRHES) were the following Subcommittee members: Elmer Akin, Alfred Brooks, Bob Craig, Don Creasia, Kowetha Davidson (Chair), Bob Eklund, Karen Galloway, Jeff Hill, David H. Johnson, Susan Kaplan, Jerry Kuhaida, James F. Lewis, Peter Malmquist, LC Manley, Donna Mims Mosby, Bill Pardue, Brenda Vowell, and Charles Washington. Other attendees included: Jack Hanley (CDC/ATSDR), Kendra Myers (Writer/Editor/Cambridge Communications), Jerry Pereira (Acting Designated Federal Official/ ATSDR).

Due to the terrorist attacks in the United States of September 11, 2001, the meeting of the Oak Ridge Reservation Health Effects Subcommittee was abbreviated. The Oak Ridge Mall, where the meeting was located, was closed at approximately 12:30 pm, but the meeting was allowed to continue. The meeting was not reconvened on September 12, 2001.



Call to Order/Opening Remarks

The Oak Ridge Reservation Health Effects Subcommittee convened on September 11, 2001. Dr. Kowetha Davidson, Chair, called the meeting to order at 12:54 pm. She asked that all meeting attendees identify themselves for the record.

Mr. Jerry Pereira, Acting Designated Federal Official (DFO), represented CDC on behalf of LaFreta Dalton, who was still in Atlanta as commercial air traffic in the United States was halted due to the terrorist attack involving the World Trade Center, the Pentagon, and a failed attempt upon the White House. The retail portion of the Oak Ridge Mall was closed down. While Y-12 was in a state of alert, Mr. Pereira said that he knew of nothing transpiring in the area that was cause for alarm, and he indicated that the Atlanta offices of CDC and ATSDR had closed down at 12:24 pm.

Based on the events in the country, the committee debated whether to hold the meeting and whether it could continue in a thoughtful, participatory, and productive manner. The alternative was to postpone the meeting to a date in the near future, perhaps in the next 4 - 6 weeks.

Discussion Summary:

- ❖ Mr. Jeff Hill suggested that the agenda be shortened so that speakers who were on site could deliver their presentations.
- ❖ Mr. Pereira noted that some presenters were in attendance, while others were either en route or would likely not be able to travel to Oak Ridge.
- ❖ Mr. James Lewis pointed out that an EPA meeting was being conducted down the hall, and that perhaps the Subcommittee's agenda could be modified to take full advantage of the EPA's availability.

Motion 1

A motion was made that the meeting continue with an abbreviated agenda, and with the speakers who were present. There was a motion to approve, it was seconded, voted on, and the motion carried.

With that, the meeting continued.

Agenda Review, Correspondence, and Announcements

The Subcommittee observed a moment of silence for those who had been killed and injured in the attacks and for the nation as a whole. Dr. Davidson then reviewed the amended agenda. Presentations by Dr. Charles Miller and Jon Johnston would take place in the afternoon. In the area of correspondence, Dr. Davidson introduced two items:

- A letter of resignation from Ed Frome
- A letter from Dr. Koplan, Director of CDC, regarding the committee's recommendation to hear a presentation from Dr. Charles Miller

The Subcommittee planned to make a decision about a follow-up meeting after the day's proceedings were complete.

Approval of June Meeting Minutes

The Subcommittee then turned their attention to the approval of the June, 2001 minutes of the Oak Ridge Reservation Health Effects Subcommittee meeting.

<p style="text-align: center;">Motion 2</p>
--

<p>A motion was made that the minutes of the June meeting be approved. There was a motion to approve. It was seconded, but discussion followed before the motion was voted on.</p>
--

Discussion Summary:

- ❖ Mr. Lewis noted a misquote in the June meeting minutes. A citizen's comment related to meeting activities, specifically to one Subcommittee member's "dominating" of the meeting, which needed to be evaluated. He suggested reviewing that section of the minutes and comparing it to the videotape of the meeting to determine whether the minutes were accurate, and whether a change should be made.
- ❖ Dr. Davidson directed the group's attention to the bottom of page 44 of the June minutes, where the sentence in question began. The issue, she recalled, was including the name "Dr. Davidson" and the words "and the board" in the sentence.
- ❖ Dr. Al Brooks pointed out that the incident in question should have been declared out-of-order at the time. He did not believe that he "dominated the board" in violation of the rules and bylaws.
- ❖ Mr. Lewis recommended reviewing the electronic records of the meeting to validate the minutes.
- ❖ Mr. Craig amended his motion, recommending that the paragraph in question be stricken from the minutes since it violated the rules of decorum. Dr. Davidson replied that it was public

comment and could not be stricken. Mr. Charles Washington indicated that the minutes can be corrected, but if a statement was made in the meeting, then it must be reflected in the minutes.

- ❖ Dr. Brooks noted that the rules of decorum were broken.
- ❖ Dr. Craig repeated his motion, but there was no second. Mr. Lewis suggested that the motion be amended as follows: the tape should be reviewed, and after that review, the minutes should be updated to reflect the findings of the review. This amendment received a second.
- ❖ Mr. Bob Eklund said that no events or statements should be deleted from the minutes if they occurred. In a controversial situation, the second source, the videotape, should be consulted.

Motion 2 – Amended

This motion was amended as follows: The tape should be reviewed, and after that review, the minutes should be updated to reflect the findings of the review. Dr. Davidson called for a vote on the amended motion to review the videotapes. The vote was ten in favor, and one opposed. The motion carried.

Motion 3

The remaining motion on the floor was to approve the June minutes. The question was called, and the motion was unanimously opposed. The approval of the minutes would then be delayed until the time of the Subcommittee's next meeting.

Discussion Summary:

- ❖ Mr. Bill Pardue commented on the conflict about the meeting minutes. A similar situation had arisen in the PHA workgroup, and the workgroup had created a process for the approval of minutes. Meeting minutes should contain what was said in the meeting and should never be changed because a member of the Subcommittee or a member of the public said, "I mis-spoke," or "I didn't say that." Minutes can be revised if the change is verified by video or audio tape, but if minutes are changed because of peoples' sensitivities, then the records of the Subcommittee will not be useful. There should be a procedure for approving and verifying meeting minutes.

- ❖ Ms. Donna Mosby asked who would review the tape to make changes. Dr. Davidson replied that the recorder usually makes those changes.

- ❖ Mr. Pereira observed that comments from the public, in particular, should not be altered, even if a comment is a personal attack on a Subcommittee member or an agency representative. If the comments are disruptive to the meeting, however, then the issue is different. He advised caution in changing public comment made in these meetings. If the citizen states that he or she has been misquoted, indicating an error in reporting, then that situation should be corrected. Mr. Lewis added that there should be no deletions. Dr. Craig apologized to the Subcommittee given that, “in the heat of the moment,” he may have taken an “errant course.”

Status of Action Items

Dr. Davidson then reviewed the action items from the July, 2001 meeting. Their status was as follows:

- Ongoing:** Provide a brief program of work for the health needs assessment; Dr. Brooks will send a copy to be edited.

- Ongoing:** Ms. Nesmith and Dr. Paranzino will develop a fact sheet about the health needs assessment process.

- Completed:** An additional “Epidemiology 101” course was offered to the committee.

- Completed:** Why arsenic was not screened for the ORNL.

- Completed:** ATSDR will follow up with HRSA about presenting at a future meeting, relative to their ability to establish a clinic at Oak Ridge.

- Completed:** ATSDR will advertise workgroup meetings on the Oak Ridge Community Calendar.

- ❑ **Ongoing:** The members will provide comments on the community input form and the facts sheet and the communications committee will work on a procedure for capturing public questions.
- ❑ **Ongoing:** Mr. Washington requested the emissions data on the plutonium fire at ORNL. Dr. Davidson suggested that be brought up to the Public Health Assessment Workgroup. She also noted that its agenda is growing, so patience may be necessary.
- ❑ **Completed:** ATSDR will explore another date for the team-building exercise at the Children's Defense Fund Lodge.
- ❑ **Being Addressed:** The Outreach and Communication Workgroup will discuss:
 1. Ways other than advertising to solicit Concerns and information on contaminants, which can also be solicited at the beginning of the public comment periods; and
 2. The development of a cross-referential document about the role of epidemiology and the public health assessment, relative to drawing conclusions about health hazards in a community as pertain to specific chemicals and their sources (perhaps Ms. Berger and Dr. Peipins can explain those differences at the next meeting).
- ❑ **Completed:** The Public Health Assessment Workgroup will evaluate the need for a formal mechanism to track needed information, such as "Inconclusive by Design," that is not applicable to the source item or contaminant information, but might offer good critical input.
- ❑ **Completed:** The Agenda Workgroup will discuss inviting Mr. Mangano to the next meeting if his study is discussed.
- ❑ **Status Pending:** Ms. Dalton agreed to consult with ATSDR's management about following up with UNOS, per Mr. Johnston's suggestion, to ask how they obtained the exception to the disability rule that he had referenced earlier.

Mr. Lewis requested that in future, the action items be numbered, rather than indicated by bullets.

**Presentation and Discussion:
Review of the Considerations for Combining
Iodine-131 Doses at the Hanford Site**

Mr. Lewis asked that context for the presentation be provided so that the audience might understand what the Subcommittee hoped to accomplish by hearing it. Dr. Davidson replied that the Public Health Assessment Workgroup requested the presentation because Iodine-131 is a contaminant of concern. There were other questions and concerns, but the main issue was whether doses from the Nevada test site should be considered, or whether the iodine releases from the local site only should be included in the assessment of Iodine-131. The Subcommittee will make a recommendation regarding the Oak Ridge site.

Dr. Charles Miller
Chief, Environmental Dosimetry Section
Radiation Studies Branch
National Center for Environmental Health

Dr. Miller pointed out that while he now works at CDC, he worked at the ORNL from 1976 until 1986. He was assigned to work on the topic of Environmental Model Validation and Uncertainty Analysis, when he worked with Owen Hoffman. His talk focused on the issue of adding or providing cumulative radiation doses. He briefed the Subcommittee on CDC's status regarding this issue.

CDC is involved in dose reconstruction as a result of a Memorandum of Understanding (MOU) between the Department of Energy (DOE) and the Department of Health and Human Services (HHS). The MOU was signed in 1990 and was revised in 1995 and 2000. This MOU transfers the energy-related epidemiologic research program to HHS, and CDC is designated as the lead agency. The National Center for Environmental Health (NCEH) coordinates the program and conducts environmental studies. The National Institute of Occupational Safety and Health (NIOSH) conducts worker health studies. An Advisory Committee on Energy-Related Epidemiologic Research (ACERER) is a Secretary-level FACA committee, providing advice directly to the Secretary's office. ACERER reviews and approves the research agenda from CDC and NIOSH. ATSDR conducts Superfund-related activities at DOE sites, and they have now been brought under the MOU. In the President's budget, there is an item for funding of HHS activities at DOE sites, which funds the MOU.

CDC has been working in a variety of sites. CDC provides technical support at the Oak Ridge and Rocky Flats sites, but is not actively at work there. CDC's involvement at Rocky Flats is changing, though, as the state of Colorado Department of Health has an agreement with DOE to do dose reconstruction at Rocky Flats. When that agreement expired, Colorado wanted to produce an individual dose-assessment program for the Internet using plutonium results from the Rocky Flats dose reconstruction. That effort is funded through the MOU.

The primary concern at Hanford is historic iodine releases. Doses for representative people were estimated by the Hanford Environmental Dose Reconstruction Project (HEDR) and were published in 1994. This project was multi-year and cost approximately \$30 million. It is still not complete. The computer codes from HEDR are used to estimate doses for real people who are participants in the Hanford Thyroid Disease Study, which is a dose-response, epidemiologic study. These codes are also used by Public Health Departments in Washington, Oregon, and Idaho in the Individual Dose Assessment Project (IDA). This project was completed in December, 2000 and provided individual doses to members of the public. This system was not Internet-based, but was based on interviews and questionnaires in booklets. The questionnaires included detailed items on lettuce and milk consumption, including the medium of milk consumption (ice cream, et cetera). Almost 8000 persons underwent this process and received individual thyroid dose estimates. At the completion of the project, some Hanford stakeholders asked CDC to investigate producing an Internet-based system.

As the Hanford Project was concluding, the National Cancer Institute (NCI) produced the document, "Estimated Exposures and Thyroid Doses Received by the American People from Iodine-131 Fallout Following Nevada Atmospheric Nuclear Bomb Tests." This report was released in 1997 and is available on the Internet. NCI estimated the thyroid dose from Iodine-131 for every county in the lower 48 states from all of the tests conducted at the Nevada test site. Congress gave CDC and NCI a joint project to investigate the feasibility of reconstructing county-level doses for other radionuclides from the Nevada test site and for global fallout.

When NCI showed this report to their administration, and they realized how much data they had, the management at NCI decided not to publish massive volumes of paper. Instead, they opted to create and implement a thyroid dose calculator on the Internet. This calculator allows anybody to calculate his or her thyroid dose according to the information presented in the NCI report. The calculator utilizes tables produced and used for the reports. To estimate Iodine-131 doses for individuals, there needs to be some information for each nuclear weapon test:

- time-integrated concentration of I-131 in all foods and ground-level air;
- how much contaminated food the individual ate or how much contaminated air the individual

- breathed; and
- the dose-conversion factor, which converts the amount of iodine taken into the body into a thyroid dose.

Some of these factors are age-dependent and change throughout the life course. Most people do not know their individual I-131 dose conversion factor. The calculation of individual doses is based on representative values that have been individualized. Everyone exposed to Oak Ridge fallout, for instance, got an iodine dose, but it is impossible to give an individual his exact dose. The calculator will provide a figure based on the representative group of people in which the individual is most likely to fit.

The current thyroid dose calculator is available at www.cancer.gov. At the same site, the full NCI report can be downloaded.

To calculate an individual dose, a person provides the following information:

- State and county of residence during the test for which the calculation is being made
- Date of birth
- Gender
- Whether the individual drank cow's milk or goat's milk
- Whether to report the dose by individual test or a total for each test series and all tests

The testing was done in groups or series, and time would pass between these series. Only one set of inputs is allowed for each calculation. If an individual moved around the country, then a new calculation is required for each move, and each figure must be added manually.

The calculator will produce:

- the individual's thyroid dose in rads,
- the geometric mean, and
- the geometric standard deviation.

The report includes instructions on how to use the geometric mean and standard deviation to calculate various percentiles. Stakeholders have expressed displeasure with this aspect of the calculator and also with the presentation of the numbers in scientific notation. The doses are for average consumption of cow's or goat's milk and are based on survey data collected by NCI. The Hanford Thyroid Disease Study asked people how many glasses of milk they consumed, which proved difficult to pinpoint. There is a high consumption number, which is 1.6 times higher than the average, and there is a "no milk" number. There are also numbers for milk from a backyard cow and from mothers' milk.

As a result of stakeholder input, NCI is revising the calculator. The individual's date of birth and gender are still needed, but the calculator will ask for the county of residence in the years in which major tests were conducted at the Nevada test site with major fallout. The type of diet can also change for each test period. The output will also change so that the result will be a low-end and high-end number: the 5th and the 95th percentile. The number will be in decimal format and in rads for each test series and for the overall tests. In addition, NCI intends to estimate lifetime risk of thyroid cancer using the calculated doses, taking into account the uncertainties in dose and risk. NCI expects to complete and post the revisions to the input requirements and output features within the next year. They hope to implement the risk calculator work after that work is completed.

People are exposed to different sources of iodine and radiation, for example:

- Weapon sites such as Hanford and Oak Ridge
- Fallout from nuclear weapons testing, both US and global
- Natural background radiation
- Medical and dental exposures
- Other man-made activities such as nuclear power plants and air travel

Knowing about the variety of exposures, is it possible to estimate an individual dose by adding all of the sources together? Given sufficient resources, it is likely that it will be possible to add at least some of the individual doses that a person receives. Should they, though? Dr. Miller has posed this question to Subcommittees and community groups, and no easy answer has emerged. This Subcommittee will have to deliberate the question for their purposes at Oak Ridge.

Adding doses is not an easy issue. The question originally surfaced for CDC as a question of adding Iodine-131 doses from Hanford and the Nevada test sites. Then, the Oak Ridge dose reconstruction included representative doses from both Oak Ridge and NTS releases. Other sites are now interested in this issue, such as the Idaho National Engineering and Environmental Laboratory Health Effects Subcommittee (INEEL), which has formally recommended that CDC include both kinds of doses in their dose reconstruction. ACERER is considering this issue as well.

CDC is a public health agency and therefore has three basic considerations:

- The public's right to know
- Technical issues
- Public health needs

CDC makes basic assumptions related to the weapons complex:

- The American people have been exposed to radionuclides and chemicals that have been released from the weapons complex.
- Complete information about these releases has not always been readily available.
- CDC is committed to providing as complete information as possible.
- CDC can provide some highly uncertain estimates of levels of exposure for some of these materials at some of these sites.

Dr. Miller noted that there are many DOE sites at which CDC has no current activity and where no activity is planned.

The Public's Right to Know: Does adding up doses really add to a citizen's knowledge of exposure?

- Exposure estimates for various sources are being developed over time; for example, there are iodine estimates from Nevada, Hanford, and Oak Ridge. There are no iodine estimates from Savannah River. There are no detailed, county-level estimates for global fallout. Should they count doses iteratively, or wait until the end?
- What doses should be added? There are many ways in which an individual's thyroid can be exposed to radiation. When the doses are added, the list will be incomplete. It is not possible to say that iodine releases from specific sites are the only exposures that the American people's thyroids have had. Radiation was used for nasal and acne treatments, for instance. These doses were not large, but affected individuals' thyroids.
- How can chemical exposures be addressed?

Technical Issues to Consider:

- The level of input: parameters can range from a small amount of information (gender, date of birth, county of residence) to the book of parameters created in the work at Hanford. The differences in these levels must be reconciled.

- Are all of the methods being used appropriate for estimating doses to individuals?

- Reconcile differences in methodologies such as basic model parameters and spatial resolution. The Hanford dose calculations were done on a 6-mile by 6-mile grid, then a 12-mile by 12-mile grid. These parameters are much smaller than a county, which NTS used. There are hundreds of different model parameter values being used by different studies.
- Account for doses from multiple radionuclides. Iodine is not the only concern: cesium, strontium, and other elements have effects as well.

Given sufficient resources, these issues can probably be addressed: the technical issues might be the easiest to answer.

Basic Public Health Questions:

- Assuming that the total doses and risk can be estimated from a given set of exposures, how can people be helped to understand what the numbers they receive really mean, and what to do about it?
- Can this information prompt an individual to do something different?

Dr. Miller emphasized that doses and risk are estimated using mathematical models. Models are approximations of reality: they are not reality. Models are always a compromise between reality and practicality. Real data is always more credible than model predictions, but there are no historic measurements of doses to members of the public. There are many ways to validate models and many treatises on which models are best. However:

“All models are wrong, and some are useful.” – George Box, as quoted by Dan Strom

How good are the models from the Oak Ridge Dose Reconstruction? ORHASP believed that the Project results provide valuable information to a number of people. While the models cannot tell a specific individual whether a given exposure made him or her sick, or will in the future, the results provide useful information about groups of people with common characteristics and behavior patterns. In sum, the models are not perfect, but they are useful.

Models rely on parameters that are uncertain from two sources:

- Natural variability, such as wind
- Lack of knowledge

The models rely on estimating milk consumption in 1954, for instance. How does a cow transfer I-131 from the grass that it eats into its milk? There are some data and some measurements that can give an indication of the absorption, but the conditions cannot be reproduced because a 1954 cow does not genetically exist anymore.

Parameter uncertainty is accounted for using subjective probability distributions. In essence, each parameter has a distribution. Nature, however, does not have a uniform distribution. It is only possible to guess that a value, then, lies within a given distribution. The state of knowledge is subjective, as data is not available for every parameter. Some parameters are set by expert opinion.

Dr. Miller directed the group's attention to part of table 11-16, which is the subjective confidence interval of I-131 thyroid doses for a female born in 1952, on a diet of backyard cow's milk, located in Solway. The table includes a lower and upper bound. The Subcommittee's job is to help the public understand what this table means to them. There is a range of a factor of 10 between the numbers, and the risk factor is a range of 100. The table says with 95 percent confidence that this woman's true, but unknown, dose from both NTS and X-10 is between 13 and 124 centigray. Most people use the central estimate, which in this case is 35. There is controversy about using the central estimate and calling it the "most likely" number in a subjective confidence interval. If an objective confidence interval were possible, then the mean of 50 would be the obvious answer.

ORHASP concluded that the doses and risks estimated in a dose reconstruction effort cannot be known with precision, so the goal is to estimate the interval within which the actual value "most surely" lies. There is an equal chance that the true value is higher or lower than the central estimate. The 95 percent confidence interval does not imply equal probability of occurrence for each value within the range. The goal is to estimate the range, and this fact is important to remember when considering the results from the Oak Ridge Reconstruction.

How can this range be translated and be helpful for people? How do people make public health-related decisions? Individuals must answer these questions:

- Have I been exposed? People of a certain age who have lived in the continental United States have been exposed to NTS fallout.
- If so, what have I been exposed to?
- How was I exposed?

- What adverse outcomes might I expect from my exposures?
- What parts of the body are most likely to have been harmed?

Representative dose estimates can address all of those questions. Most doctors do not use a patient's dose in deciding on a course of action for them. After the Hanford Dose Assessment Project, the states of Washington, Oregon, and Idaho had to create a public health statement. The essence of the statement informed citizens of their "number," clarified that it represented a range, and advised people who were concerned to see their health care provider. ACERER is preparing a plan that:

- describes the requirements for developing and implementing a public health information program that could estimate and inform all people in the United States of their individual, cumulative thyroid doses and related health risks as a result of their exposure to I-131; and
- presents a proposed time-line for fully implementing such a program, given optimum resources.

Stakeholders have requested an Internet-based calculator for Hanford. At the beginning of the process, an Internet-based, individual dose estimator was developed for the Hanford Environmental Dose Reconstruction (HEDR) domain. A prototype, county-level dose estimator should be available on the Internet this month. This prototype will not calculate doses because it is designed only to garner public input on its format. There is a link from the Hanford Dose Estimator to the NCI Internet site. An individual can do calculations on the NCI site and then return to the Hanford site to add the doses.

After the public has commented on the prototype, plans for implementation will be made. The implementation of the Hanford Dose Estimator could occur in 2002 if sufficient financial and staff resources are identified and if the implementation is determined to be in the interest of public health. These efforts will be coordinated with NCI's communication efforts. NCI had begun a major communications effort to inform the American public of the results of the fallout study. The Hanford Dose Estimator will be compatible with NCI's work. The Estimator will be kept current with NCI's work.

CDC is responding to this request from ACERER, and any implementation requires the identification of resources and of a public health need. CDC and NCI are working with stakeholders to develop information that citizens need to evaluate their potential risk from I-131 exposure, both from adding doses and from other tools. The technical issue of adding doses is easy. The more difficult question is: Should doses be added? If so, how should that information be communicated to people so that they will make good public health decisions?

Discussion Summary:

- ❖ Before the discussion of Dr. Miller's presentation, Mr. Bill Pardue addressed an administrative matter. Dr. Peipins, from ATSDR, had arrived at the meeting, and she wondered whether the group wanted to hear her presentation on the Mangano Report on Cancer Mortality at this meeting, or whether she should wait until the next meeting. The audience was not wide at this meeting, and Mr. Pardue felt that there were more citizens who were interested in the report than were present. The presentation was a review of the results of the PHA workgroup's last meeting, including its conclusions and a recommendation to the Subcommittee. Other reasons to postpone the presentation included the fact that the workgroup had not yet had the opportunity to view a videotape presentation about the report. Also, the workgroup had yet to consider and vote on the draft recommendation of their evaluation of the report.

Motion 4

A motion was made that the presentation of the Mangano Report be postponed until the rest of the Public Health Assessment Workgroup has a chance to view the videotape. The motion was seconded, voted upon, and unanimously approved.

The discussion of Dr. Miller's presentation began with questions from Subcommittee members.

- ❖ Mr. Pardue understood that the Idaho Health Effects Subcommittee was the only one that had asked to have the combined doses evaluated. Dr. Miller replied that the Subcommittee was the only one that had passed a formal resolution to that effect. The Subcommittees in Idaho and at Savannah River have been assured that when the I-131 doses are reached in their project, fallout doses will be considered.
- ❖ Mr. Pardue asked whether Idaho's favor of an "additive approach" was influenced by the fact that they seemed to have suffered most highly from the fallout, judging from the map. Dr. Miller believed that there were a number of factors, but that the NTS report released by NCI raised issues and concerns in the state of Idaho.
- ❖ Mr. Pardue asked Dr. Miller to estimate the magnitude of the exposures, doses, or health effects in the Oak Ridge vicinity resulting from NTS fallout compared to the RALA releases in

Oak Ridge. Dr. Miller answered that he would rely on the Oak Ridge Dose Reconstruction to address that question, not recalling the exact numbers.

- ❖ Mr. Lewis asked whether there was a particular area, city, or population in the country that may have received doses that were equivalent to the exposures in Oak Ridge, or if there is a site in the country with a rate of exposure that is higher than the rate in Oak Ridge. Dr. Miller recalled that early releases at Hanford were higher than the ones in Oak Ridge, without considering fallout. There were representative individuals who were born in 1945, downwind from Hanford, who received high doses from Hanford without considering the Nevada Test site. Releases at Oak Ridge, Savannah River, and other sites are in addition to the Nevada test site. When considering the Nevada test site, the key is not as much where an individual lived – a young female drinking goat's or cow's milk was at the highest risk, regardless of where she lived in the country.
- ❖ Mr. Lewis asked whether Dr. Miller had a feel for another place in the country that was comparable to Oak Ridge in exposure. Dr. Miller replied that they could be anywhere in the country. NCI will try to convey the message that if an individual is in a certain category, then there is the potential for higher exposure, almost independent of location.
- ❖ Ms. Susan Kaplan asked Dr. Miller to comment on the use of central values versus the 95th percentile. It appeared to her that ATSDR is leaning toward the use of central values. Dr. Miller replied that in making this decision, it is important to keep the purpose of the exercise in mind. He believed that the dose reconstruction process as practiced in Oak Ridge and Hanford was conducted to provide a range of numbers, not to provide a best estimate. The 50th percentile could be used for other purposes, though. ORHASP does not believe that the two ranges should be relied upon definitely. There is no easy answer when trying to decide which is the best. If the question were regulatory, then he would recommend looking at the models that were used to develop the regulation. Since they are dealing with a public health issue, the dose reconstruction process can only say that there is a degree of confidence that the true value lies in the range.
- ❖ In establishing the 95 percent confidence interval, Dr. Davidson inquired as to whether the upper value represented a worst-case scenario, and if so, whether that was plausible. Dr. Miller answered that the upper value is not necessarily the worst-case scenario, depending on how the calculations are done. There are many assumptions that can be made to ascertain the worst-case scenario. He could not say whether the 95th percentile was probable, but the calculations say that it is possible. The likelihood of the 95th percentile is probably small, but it cannot be ruled out. It is possible that there might be something worse.

- ❖ Mr. Washington asked whether Dr. Miller suspects that there is a significant amount of Iodine-131 in the Savannah area. Dr. Miller does not suppose that, but said that they do not have numbers from Savannah yet. They are in the process of deciding which radionuclides would be assessed in the dose reconstruction project for Savannah. He expected that I-131 would be one of them. In that project, they will assess I-131 released at the site as well as in fallout.
- ❖ Mr. Washington asked whether the Savannah exposures could contribute to exposures in the Oak Ridge area because of Savannah's proximity to Oak Ridge. Dr. Miller did not think that an effect from Savannah was impossible, but that it was highly unlikely. The prevailing wind direction is in the other direction, and there is a distance with mountains between the regions.
- ❖ Mr. Elmer Akin commented on the public health question of whether this information can be used to prompt an individual to do something different. This question is at the heart of all environmental exposures, whether radiation or chemical. He felt that the question was about more than changing behavior as a result of knowledge given that people have an innate need to know what has caused their problem. The issue then becomes how far the government will go to answer that question and to provide resources for citizens. Dr. Miller agreed and noted that he wondered about whether adding doses will provide public health benefit. Should resources be put into something else? How does knowing your dose help you interact with the health system? Some doctors want to know their patients' dose, while others do not. He did not give an answer to those questions, as he is asking them of all the Subcommittees.
- ❖ Mr. Manley asked if there had been an elevation in thyroid diseases for women who were born between 1944 and 1956. Dr. Miller appreciated the question, but said that he was the wrong person to answer it. The American Thyroid Association states that there is an epidemic of thyroid problems in the country. The Association has recommended that individuals over the age of 35 have a thyroid function test as part of their annual physical exam. The NCI has done work in estimating the number of excess cancers, and they have found that there is a likelihood that there has been an increase in thyroid cancers as a result of NTS fallout. It is not possible to quantify thyroid function diseases or cancers at this time, which is not to say that they do not exist, and there is evidence to suggest that I-131 exposure can cause those diseases, if the exposure is high enough. There is no dose-response relationship as yet.
- ❖ Dr. Brooks asked about the 95 percent confidence level, which has been calculated as the difference between the 2 ½ percentile and the 97 ½ percentile. Certain statements have been made about its properties using nomenclature that is similar to the treatment of a confidence level of a mean, which is a different issue. No writings have indicated what the nature of the

subjective confidence level is. As the difference between the two percentiles, it is really defining the region of the probability curve which contains 95 percent of the observations. It does not make a statement about the percentage at the mean as contained in that interval. As these input distributions are taken in an arbitrary way, the confidence level gets large enough that it can go outside the correct distribution. Dr. Miller replied that as a non-statistician, he was not sure he could add to the discussion in that area. The meaning of the subjective confidence interval needs work. Part of the problem is that they are using statistical terms and statistical language to describe something that violates many of the assumptions and guidelines of the language. Some people are not talking about a subjective confidence interval at all for that calculation. Instead, they are talking about a credibility interval.

- ❖ Dr. Brooks added that there are areas of science in which an honest answer is, “I don’t know.” He observed that the subjective confidence interval is one of those instances. Dr. Miller concurred, saying that it represents an intent on the part of the statisticians and scientists to be as honest as they can, while assigning numbers. In these calculations, they would like to be able to make that interval as small as possible, but at present, there are too many unknowns to be able to do that.
- ❖ Dr. Davidson asked to what degree the subjective confidence intervals vary by the model being applied and the person applying the model. Dr. Miller answered that they can vary. In a model such as the Dose Reconstruction, the models will not vary a great deal at the end. If the Oak Ridge group re-did the Hanford reconstruction, and vice versa, there would likely be changes. He felt, though, that at the end, there would be a great deal of overlap and no significant difference. This statement is made assuming that there were no major mistakes made in the work.
- ❖ Mr. Eklund asked whether, if the actual value is between the 5th and 95th percentiles, there is a uniform distribution of likelihood; that is, is the 95th percentile value as equally likely to have happened as the 5th percentile? Dr. Miller responded that there is controversy around that question. Most people believe that the distribution is not uniform, and that a figure in the “middle” is more likely than the two extremes. It is not possible to tell where the “middle” is, or how wide it is.
- ❖ Mr. Eklund returned to the question of whether this information can prompt an individual to do something different. Any information that an individual gets has some effect in his or her behavior, in some way. These effects can be negligible or important. A person’s behavior is more likely to change when there is an increased risk of disease. If a person’s risk of thyroid disease is increased because of a release, then he or she will not want such a release to happen

again, and without knowledge of dose and risk, that awareness would not be part of a person's behavior.

- ❖ When looking at reports such as these, Mr. Hill focuses on the conclusions. He wants to know the impact on him, what is an assumed safe level, and his exposure. He can look at the NTS, Hanford, and ORNL exposures and their safe levels and not have concerns. If those doses are not added together to give a realistic exposure, combined with his work exposures, then he does not know what to relay to his healthcare provider. If his total, though, is reason for concern, then he will be more likely to relay that information. Not adding exposures is wrong.
- ❖ Mr. Lewis commented on the models for the various sites and the degree of uncertainty about each of them. He was concerned about the message that they may send, whether they opt to use the central values or not. The reaction of the general public is the concern of the Subcommittee, and there are different segments of the public to consider: individuals who are sick or ill, who feel that these exposures may be related to their illness; and the public in general. Another issue to consider is what the healthcare provider will do with the data. He likened the situation to the difference between an "idiot light" in a car, which provokes one kind of response, and an analog gauge, which people can consult to monitor progress. He wondered how to handle the message to the public to ensure that they will respond in a reasonable fashion. Dr. Miller said that Mr. Lewis's question was the main issue being tackled by the NCI in their communications campaign. The NCI is assembling focus groups, including groups with physicians and healthcare providers, to try to identify how to package the message in a way that will encourage people to get the healthcare that they need without having an inappropriate reaction.
- ❖ Mr. Lewis wondered whether there was a time-table to NCI's activity in this area and whether the Subcommittee should factor that schedule into their decision. Dr. Miller surmised that NCI would create materials for presentation in the next fiscal year. NCI is developing these materials that can be disseminated at the local level.
- ❖ Ms. Kaplan admitted that the question that she was about to ask was unfair, and said that if Dr. Miller chose not to answer it, she would understand. She asked whether, if he had a daughter who had been impacted by the tests, whether he would vote to use the central value or the percentile interval. Dr. Miller answered that he would not care what the numbers were. If he were in that situation, if he knew that he had fed his daughter from a backyard cow or goat, then he would encourage her to be checked by a thyroid specialist. Part of his opinion comes from knowing that the numbers were uncertain. His own numbers range from .01 to 124 rads, and he would always err on the side of being checked. If he were sitting on the Subcommittee, then

he would calculate extremes for both options. He would see where he fit in the range and craft his public health message based on those ranges.

- ❖ Dr. Davidson asked about the relative contribution of other sources of radiation exposure such as dental x-rays compared to those from NTS, Hanford, or Oak Ridge. Dr. Miller answered that looking at the averages, the relative contribution of those other sources would likely be negligible; however, the number of exposures varies per person, so he cannot say what sources had an impact on any given individual.
- ❖ Mr. Lewis suggested that if the doses were added, there are other contaminants of concern. Would they “set off an avalanche” if they tried to assess all doses, such as arsenic from coal plants? Where does it stop? Dr. Miller replied that he does not know. They have studied I-131 and have a great deal of information on it, but they do not have as much information on the other contaminants. How they help the public account for these things is a big question. In looking at time and resources, they should decide whether there might be a better way of doing it.
- ❖ Dr. Davidson thanked Dr. Miller for his presentation and for fielding the Subcommittee’s questions. He had given the Subcommittee a great deal of issues to consider:
 - ➔ Should they recommend using the range or a central value?
 - ➔ What impact will adding doses have on the public health assessment?

Public Comment and Discussion

The microphone was open for members of the public to speak:

- ❖ Mr. Coin commented that fluoride and certain other mixed chemicals have the same effects as iodine does. In all of the releases from K-25, fluoride could be a contributing factor.
- ❖ Dr. Davidson had not been aware that fluoride had an effect on the thyroid. The issue can be investigated toxicologically. These effects will be investigated and presented.

The floor remained open to the public until 3:45 pm. As no other members of the public spoke, the floor was opened to Subcommittee members to make statements:

- ❖ Mr. Lewis reflected on improving the efficiency and effectiveness of the workgroups and the

Subcommittee. He advocated for a “lessons learned” discussion that would focus on the Subcommittee’s future direction and how to make improvements. This discussion should be open and honest, and the Subcommittee should outline their strengths and weaknesses. They have lost some good members, and he wondered whether these losses were due to the Subcommittee’s not completing work in a timely and effective manner. He would like this discussion scheduled as soon as possible, and it should be planned carefully. Dr. Davidson noted that the Subcommittee planned to discuss ways to self-evaluate its work. There have been questions related to the Chair as well as to the Subcommittee as a whole. She has been thinking about this issue so that they can improve. Mr. Lewis reiterated that pre-work will make the discussion much more productive, as the issues can be outlined in advance. Dr. Davidson noted the engagement of an individual to help them through the process.

- ❖ Mr. Hill noted a recent telephone survey that assessed the Subcommittee members’ areas of interest. Dr. Davidson replied that the results of the survey were not complete or ready for discussion.

The group then engaged in a general discussion about when the postponement of the meeting could be scheduled.

- ❖ Mr. Pereira indicated that the agenda would have to be shaped to determine how long the meeting would need to be.
- ❖ Dr. Brooks pointed out that the LOC traditionally meets on the second Tuesday of each month, and so the Subcommittee should endeavor in the future not to meet on those days, in the evening.
- ❖ Dr. Brooks suggested that the agenda preparation be based on omissions from the current meeting rather than implementing the full agenda preparation schedule.
- ❖ The group ultimately decided on the 15th and 16th of October, with alternate dates of the 29th and 30th.

Update on Off-Site Sampling

*Elmer Akin and Jon Johnston
Office of Technical Service
Waste Management Division*

US EPA

Mr. Akin's talk had been scheduled for the next day of the meeting, but as the meeting had been truncated, update on off-site sampling was presented. The importance of the issue of off-site sampling has been expressed by both the Subcommittee and by community members at large. Therefore, Mr. Akin has involved senior management of the EPA in making a report regarding sampling in the Oak Ridge and the Scarborough area. He introduced the Federal Facility Branch Chief of EPA Region Four, Jon Johnston, who is responsible for EPA's activity in DOD and DOE areas.

Mr. Johnston greeted the Subcommittee and thanked them for the opportunity to address them. He has held community meetings regarding upcoming sampling that EPA plans in the Scarborough community. EPA has taken public comment on a draft study, and they had been slow in implementing the study.

The DOE conducted a study of soil samples in 1998 from around the Scarborough area. These samples were analyzed for a variety of elements. The EPA received feedback from this study and then devised a study plan based on the feedback. The original study yielded valuable information, but the data package needs to be completed by the new report to assure its conclusions. The EPA will begin the new sampling the week of September 24, 2001 with the following points in mind:

- The samples taken in the 1998 report were surface samples, and there was a question about whether uranium, for instance, would be found at those depths, or whether a deeper core sample should be taken. Therefore, some of the samples will be deeper.
- Regarding uranium in the soil from the industrial activities at the DOE facilities, these questions arise: Is it present? What is present? Where did it come from? There are differences of opinion on this issue, but it seems that to be able to determine the local sources of uranium activity, the data should be analyzed at a different level to ensure that the uranium isotopes that can answer this question can be assessed.
- The analyses in 1998 determined that there were no contaminants found above health-based guidelines, so no immediate action was needed for the soils that were sampled. Some of the analyses did not seem to cover the contaminants that correspond to the release histories, particularly of Y-12. A total of 26 contaminants did not appear to be analyzed in the samples that were taken, and this data gap can be addressed in a fairly straightforward manner.

EPA representatives have not been very clear in the community. They originally talked about "verifying" the original data, which is misleading. A soil sample is virtually impossible to verify, as the soil matrix itself will yield analytical variations. The new study will attempt to generate data which will be

compared to the original report.

The Scarborough community is not the only place where these questions should be raised. The community feels singled out as “contaminated,” and this impression is unfair. EPA can help with this impression by publicizing study results and also by comparing the results to other areas. Questions about soil values, contamination, health effects, and the potential need to look at the Oak Ridge community in a larger sense, including historical releases and what might remain in the soil, are being asked of EPA, TDEC, DOE, and the ORRHES, as well as other agencies and committees. The question of what to do about historical releases in the larger community is a pertinent one. DOE needs advice, and someone needs to take responsibility for the follow-up questions of:

- what to do about the larger issues of soil contamination,
- the legacy of releases,
- health-related questions, and
- how to inform the public.

EPA will take ten samples in the week of September 24th. The study is designed to be small and limited. The samples will be sent to the National Air and Radiation Exposure Lab in Montgomery, Alabama. Those ten samples will be compared with the original data. It could take as long as four months to share the information. If the new data are in the same range of values as the first study, then they will conclude that there is nothing in the soil that exceeds federal health standards and that any further work in the Scarborough community should be done as part of larger-area studies. If the new data does not agree with the original data (for instance, if a contaminant that was not discovered in the original report is found), then they will notify DOE of the new problem that must be prioritized. This function is part of EPA’s duties under Superfund.

Discussion Summary:

- ❖ Ms. Kaplan inquired about the title of the original report. She also asked about the procedure that will be used to take the ten samples in the new study. Mr. Johnston answered that the original report was conducted by Florida A&M University. It was a DOE report. The study plan for the sampling is in draft copy, which refers to the EPA’s *Standard Operating Procedures and Quality Assurance Manual*. The personnel for the sampling include Sharon Matthews and Kevin Simmons, who are from the Science and Ecosystem Support Division of EPA. The Oak Ridge oversight office will be there in the field as well. As a responsible party, DOE has a statutory right to a split sample. They have not specified whether they want that sample.

- ❖ Mr. Akin added that the community had been informed about the sampling and had heard a presentation from the EPA laboratory in Athens, Georgia, about the impact of sampling on the community. Mr. Johnston added that there had been confusion about the times of community meetings.
- ❖ Mr. Pardue served on the Site-Specific Advisory Board, and he recalled an EPA representative on that board stating that there was activity underway between DOE, T-DEC, and EPA to develop a sampling plan all of Oak Ridge. Mr. Johnston replied that there had been no progress in that effort. Under Superfund, DOE, T-DEC, and EPA meet on a variety of levels. At a recent senior management meeting, the DOE expressed requests for a greater, community-wide effort of sampling or collection of historical data before taking more samples. Since then, the EPA project managers have discussed how to put that effort into a priority scheme, but the task should not be on them. Senior and middle managers have had discussions that have not been fruitful. There were questions about how to make such an effort. Who would do it? Oak Ridge is a “national priorities list” site under the Superfund statute. Studies and response actions to any releases from the facility are its responsibility; that is, the DOE, which is the lead agency by executive order. All concerned agencies and committees, as well as community members, have expressed a desire for an effort, and the time has come to move forward.
- ❖ Dr. Brooks remarked that the EPA representative at the SSAB meeting promised a response in writing to a number of questions submitted by several organizations in Oak Ridge. He noted that Mr. Johnston had answered some of those questions, but it was likely that there would still be conflicts, given the variety of his audiences. Dr. Brooks suggested that EPA write a brief response to the submitted questions. Mr. Johnston agreed, adding that he had made that assignment to one of his staff members.
- ❖ Dr. Brooks also noted the long history of this inter-agency working group for widespread sampling. At one meeting, T-DEC stated that they would take the task on and would provide a plan in a month. After some time, the planning had been given to DOE. Then the inter-agency group was formed, and then they heard that EPA was the lead agency. Now, they are hearing that EPA is the lead agency, and that conflict should be resolved. Mr. Jack Hanley clarified the issue. There was an inter-agency conference call in July of 2000. EPA was offered the lead to set up a working group meeting so that the technical staff could develop a plan to bring to the other committees. The meeting was held in February 2001. A plan was not developed at that meeting.
- ❖ Dr. Brooks expected that the Subcommittee would be interested in expediting the plan, as they have had requests from an array of areas for a larger study. He wondered to whom they should

write a letter to move the process along. Mr. Johnston replied that the DOE would benefit from that opinion. He also suggested writing the Acting Regional Administrator of EPA, Stanley Meiberg. John Owsley or Milton Hamilton at T-DEC were other possibilities. Dr. Brooks mentioned including Bill Moore's successor. He was more interested in the future than in the past, and hoped to move toward a fact-based, established condition of the Oak Ridge environment.

- ❖ Mr. Akin commented that resources to carry out the work would be a big issue. DOE, not EPA, resources would be used to do the sampling work. Mr. Johnston agreed, noting that EPA resources are limited and that under the executive order, DOE should do the work.
- ❖ Mr. Johnston added more persons that the Subcommittee could contact to move the project forward: Leah Dever and Rod Nelson at DOE. They are the action agencies in the federal family who need to take action. They understand that they have that responsibility, but are unclear on how to proceed. The project being proposed is large and complex. Beginning the process requires someone taking ownership of the issue.
- ❖ Mr. Akin commented on EPA's credibility issues. In the Oak Ridge community, EPA has some credibility that DOE does not, so they get direct requests for unilateral action. Dealing with the off-site sampling and how to communicate it is an important issue. The Subcommittee would be a key communication mechanism. There is suspicion around DOE in some circles, which will have to be reconciled with the fact that DOE will do the work, and EPA will act as oversight.
- ❖ Dr. Davidson remarked on community confusion with the different agencies. Each agency's responsibilities and how they interact are not clear. Dr. Brooks said that DOE has the money, and DOE does the work. There should be oversight from EPA, the Department of Health, ATSDR, T-DEC, and others.
- ❖ Mr. Jerry Kuhaida recalled a project from the early 1990s, when risk analysis was just being developed for the Oak Ridge reservation. At that time, there was a soil background study for the Oak Ridge reservation that was conducted by the Environmental Sciences Division at Oak Ridge National Laboratory for the Environmental Restoration Program. He was technical manager for the program, and the study was long and detailed, involving three transects. Dr. Johnston was familiar with the study, and Mr. Hanley added that the study had been used by Florida A&M to compare their soil samples.
- ❖ Mr. Lewis expressed his frustration while waiting for EPA to take action. EPA has decided to conduct sampling the week of September 24th, but some community requests and

recommendations did not support this decision. Mr. Lewis accepted the decision to sample, but cautioned EPA against making another mistake. Referring to Mr. Akin's comment about the EPA having more credibility than DOE, Mr. Lewis said that every agency has credibility in the community "until they weigh in." If an agency weighs in and the community is not pleased, then the agency's credibility is lessened. A community that is trying to resolve a number of issues must have issues and ideas presented to them in a logical and sequential manner, which will develop trust. He hoped that the EPA would not weigh in with a small number of samples and expect that the study will address a litany of other issues and concerns in the community regarding past history.

- ❖ Mr. Johnston assured Mr. Lewis that the EPA did not make that assumption.
- ❖ Mr. Lewis understood that the EPA did not make that assumption, but perception in the community is reality, he said. The Subcommittee was formed to bring synergy to all of the different agencies that work in the Oak Ridge area, and he believed that EPA should have come before the Subcommittee to make them formally aware of their plans so that the Subcommittee could share those ideas and plans with the community. The community would then have been better equipped to hear specifics about the plans. Oak Ridge is a technically-savvy community as a whole, but some communities do not have the same level of expertise, so they rely on the words of a few people. That community should have had a more definitive presentation of information, with a logical support for conclusions and answers to community questions. If he disagrees with the EPA's work, then how can he file a complaint to look at the sequence of issues and whether or not the proposed work may create a larger problem than what currently exists? He expressed his hope that EPA would consider the needs of the people.
- ❖ Mr. Johnston accepted Mr. Lewis's comments, but stated that it was not correct to say that EPA had not been in the community and had not communicated with the Subcommittee about the proposed study. He outlined some instances of EPA presence in the community and at the Subcommittee. He did not believe that EPA representatives had been clear or timely, but he planned to learn from those mistakes. Many people come to many meetings in Oak Ridge, and the same people do not attend the different meetings. EPA tries to reach the groups that they can. He is not sure that it is possible to communicate with all interested parties. In the community meeting the night before, he observed a diversity of opinion among the attendees and a range of public reaction, both strongly in favor of, and strongly opposed to, the upcoming soil sampling.
- ❖ Mr. Johnston noted that to register complaints or to make comments, three people can be contacted:

- ➔ James S. Kutzman, who is Mr. Johnston's supervisor. He is the Deputy Director of the Waste Management Division; 61 Forsyth Street, Atlanta, GA 30303 (the address is the same for all three EPA managers).
- ➔ His boss is Richard D. Green, the Director of the Waste Management Division, who has been in the Oak Ridge community to talk about the sampling.
- ➔ Dr. A. Stanley Meiberg is the Acting Regional Administrator, and he welcomes comments about the sampling.

- ❖ Mr. Washington congratulated Mr. Akin and Mr. Johnston. They had changed his mind about having DOE representation at the table. Mr. Akin's representation has led to their questions being answered by a high-level EPA official. There is benefit in having representatives from agencies with funding at the table.

- ❖ Mr. Hanley asked about the upcoming sampling, which it is a validation sampling to follow-up Florida A&M's analysis. Did they identify any technical, analytical, or laboratory problems with the data? Mr. Johnston replied that they had not, as they were not in a position to make those evaluations since they did not take split samples.

- ❖ The sampling was presented to the Scarborough community in September of 1998, said Mr. Hanley. At that time, Florida A&M presented the analytical results, not a health interpretation of the data. DOE gave a grant to the Joint Centers for Economic and Political Studies to assess the health implications of the study results. ATSDR and the Joint Centers approached the Scarborough Environmental Justice Committee in December of 1998, and the members conveyed that they did not trust the data from the study because they had read in the paper that EPA had said that the data was not good. ATSDR then visited the laboratories and personnel in Florida and found no problems with the data that would prevent a judgement on its health implications. Since the community did not trust the data, the Joint Centers recommended waiting to do health assessments, as the EPA would be sampling in the Spring of 1999. When the sampling was finished, the perception that the data is bad might be alleviated.

- ❖ Mr. Johnston acknowledged that his staff may have made statements that were not clear, such as stating that the data packages were not included in the report. Mr. Hanley suggested that Mr. Johnston be clear in his meeting that night that the EPA did not find problems with the original data. Mr. Johnston reiterated that the upcoming sampling was aimed at filling in gaps in

the analysis.

- ❖ Bob Peele commented that when this issue arose earlier, he had been involved with the SSAB and interacted with the EPA. He noted at the time that many of the uranium isotopic results depended on comparing total uranium and uranium-235, by gamma rays. This comparison requires two absolute measurements of different quantities, and it is a bad way to obtain isotopic ratios when one of the issues is qualitative. Where did the uranium come from? Whereas, the air sampling measurements in Scarborough show an excess of uranium. There must surely be uranium in the ground at some level. Interpretation must be done in that framework. Most of the original measurements were made that way, and then conclusions were drawn which might be right or wrong. He hoped that EPA would measure the isotopic ratio. Mr. Johnston replied that measuring isotopic ratios was one of their key criteria.
- ❖ Dr. Brooks asked whether, given that Dr. Johnston had “never put this much effort into ten samples,” he had ever had more than one meeting for every two samples, as they have over the past three years. Communications have not always been perfect, but EPA has tried to convey this information to the community in every way possible, he believed.
- ❖ Mr. Eklund observed that the inter-agency sampling of Scarborough is stalled and has been for too long. The problem may lie in a matter of trust. DOE might acknowledge this factor internally. If they did the sampling, it would probably get the same response as previous samplings had gotten. Since EPA does not have that “label,” he wondered whether DOE could fund a sampling, but EPA could plan it, do the sampling, do the laboratory work, and report it. Would EPA be willing to do this endeavor? Mr. Johnston replied that EPA would certainly be willing to consider such a project if there were a request from citizens or from an advisory committee. Actually conducting the project would be a much larger decision with a number of parameters, including a shrinking workforce and the fact that EPA has no statutory authority to supplant the lead agency. Fiscal laws preclude EPA from using Superfund dollars to study a federal facility because the authorization from Congress to do that work goes to the other department. The Federal Managers Integrity Act is also a factor. There must be people and laboratory space to do work, and both are difficult questions. The EPA full-time equivalents are being cut. In his opinion, the only way to make the project work is to get it out in the open and convince the various agencies and the citizens to make it a high priority. DOE is doing a great deal of work, and Mr. Johnston asked people to weigh in on where the project fits in the list of priorities.
- ❖ Mr. Eklund asked whether EPA oversight of planning, sampling, and laboratory work was feasible. Mr. Johnston replied that it was.

- ❖ Dr. Davidson asked whether any members of the public had comments to offer. As there were none, the conversation continued.
- ❖ Mr. Eklund noted that the community prefers that EPA do work over DOE. Mr. Johnston replied that “the community” is diverse and has a range of opinions. There are many communities, and EPA has to hear all of their voices when hearing from “the community.”
- ❖ Mr. Akin shared Mr. Lewis’s frustration in the process. Mr. Johnston had been candid about EPA’s legal abilities and where the burdens of activity fall. He was also aware that credibility is short-lived and is hard to regain. Since “perception is reality,” then it behooves all of them to align perception with reality in the community. Perception that is different from reality can do damage, so it is important to help the community understand the roles of EPA and DOE. He hoped that Mr. Johnston’s presence and his statements in community meetings would influence them as they proceed, and as requests come to them regarding the off-site sampling. A monumental question is being posed about the off-site areas around the Oak Ridge reservation. “Site characterization” is always an issue. How much sampling is enough to characterize a site? He cautioned that the ten samples that come from the upcoming sampling may lead to more questions than they answer if they do not match the previous report. The Subcommittee needs to be ready to examine the ramifications of the data and how to proceed when it comes in. This committee can help the community understand what can be done and the required time-frame and resources. When the off-site work proceeds, then it must be given a high priority or there will be a great deal of frustration in the community and on the Subcommittee if there is not a clear understanding of the resources. He wanted to be the liaison to the EPA on this issue, bringing people to speak to the Subcommittee on it. Site characterization is becoming a large issue, and there must be a structure in place to accomplish it.
- ❖ Dr. Davidson asked if there were public comments. As there were none, the discussion continued.
- ❖ Mr. Manley commented on credibility. If they do not bring people what they want, they will not have credibility. He gave the example of a group of Scarborough children who were sick. Their families did not trust the doctors in Oak Ridge, so they children went to doctors in Knoxville, through CDC. When CDC did not find anything wrong with the children, then CDC lost credibility. Falling out of favor is almost inevitable. Mr. Johnston understood that point and said that EPA would do a better job of presenting what they are doing, how they are doing it, what the results are, and what the results mean.

- ❖ Dr. Davidson asked if members of the public would like to speak. No members of the public came forward.

- ❖ Mr. Lewis apologized for becoming emotional, and he responded to Mr. Akin and Mr. Johnston's comments. He said, "Sometimes, the boss is never wrong, he just gets bad advice or skewed data." Actions may be taken without the appropriate feedback from certain levels of the community. Many people have high hopes that the EPA will give them the answer that they want. In the general African-American community, he observed, word does not get out in the same manner as in other communities, and they do not always have the same level of expertise. He noted that the community does not get detailed minutes of EPA meetings so that the proceedings and presentations can be shared with members of the community. If work is done and taken out of context, then it hurts the community. He spoke then from the perspective of the African-American community, saying that they are not always as organized as they should be. They need to be up-front and come together collectively with their expertise to interact with the EPA. He recommended that EPA be careful and not listen to only one or two people. There is an office in Oak Ridge that has a better sense of what is going on in the community. Having these connections will provide EPA with better feedback so that they can time their responses to aid in recovery. He thanked Mr. Johnston for his efforts.

- ❖ Dr. Davidson stated her belief that Scarborough is an informed community and that all of the communities in Oak Ridge make efforts to be informed.

- ❖ Dr. Johnston thanked the Subcommittee for their time and the work that they are doing. He encouraged their work in an advisory capacity, saying that their work is consulted by other members of the government.

Closing Comments

Dr. Davidson presented an issue for the Subcommittee's approval. She recommended that the Subcommittee examine the broader issue of soil sampling for the general area. She asked the Subcommittee to approve that the Chair work with the Public Health Assessment Workgroup to draft a recommendation to ATSDR so that they may ascertain the responsible agencies are for the soil sampling and their responsibilities.

Motion 5

A formal motion was made for the Subcommittee to examine the broader issue of soil sampling for the general area, and for the Subcommittee Chair to work with the Public Health Assessment Workgroup to draft a recommendation to ATSDR so that they may ascertain the responsible agencies are for the soil sampling and their responsibilities. The motion was seconded, voted upon, and unanimously approved.

Discussion Summary:

- ❖ Dr. Davidson reminded the group that they would not be meeting the next day, and that the two potential dates for meetings to complete the agenda were October 15th and 16th; and October 29th and 30th.
- ❖ Mr. Pardue commented that the Public Health Assessment Workgroup would meet within the next few weeks. Their agreement had been the 1st and 3rd Mondays of the month, which he would confirm via e-mail.
- ❖ Ms. Kaplan pointed out that ATSDR fulfilled their commitment to provide organizational charts of their agency, and thanked them. She asked that EPA develop those charts as well.
- ❖ Dr. Brooks said that the Agenda Workgroup would wait to collect comment until they receive a proposed agenda from ATSDR. They did not receive flowchart information from George Washington University, and he asked to renew that action item.
- ❖ Ms. Mosby said that a recent conversation with Rebecca Parkin led her to believe that this flowchart would be available soon. She and Mr. Lewis offered an update on the Needs Assessment Workgroup. Ms. Parkin's presentation was to be an update on the Workgroup: they have done some questioning. The content of the questions or any results will not yet be reported, but she was going to update the group on how many people had been contacted and the status of IRB approvals. They want to be complete by the end of the year and they need IRB approval by the end of September in order to complete the telephone survey by the end of October. Only 50 percent of the key informants had been reached, but the group seems to be making good progress. They generate a weekly report, which could be summarized and prepared for the monthly Chairs' meeting.
- ❖ Ms. Karen Galloway noted that a draft of a mission statement for the Subcommittee had been requested. All members of the Subcommittee have not seen the draft, so she left copies for members to collect.

Dr. Davidson asked that all members pray and meditate for their country and for the victims of the terrorist attacks. With that, the meeting was adjourned.

End of Summary Proceedings
