

**OAK RIDGE RESERVATION  
HEALTH EFFECTS SUBCOMMITTEE**

**CENTERS FOR DISEASE CONTROL AND PREVENTION  
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY**

**Detailed Proceedings of the February 11, 2002 meeting of the Subcommittee**

**Call to Order/ Opening Remarks/ Introductions**

The Oak Ridge Reservation Health Effects Subcommittee convened on February 11, 2002 at the YWCA at 1660 Oak Ridge Turnpike, Oak Ridge, Tennessee. Chairperson Kowetha Davidson called the meeting to order at 12:15 PM. Meeting attendees were asked to identify themselves for the record. The attendees at this time were:

Elmer Akin  
Barbara Sonnenburg  
David Johnson  
Jerry Kuhaida  
Chudi Nwangwa  
Bob Eklund  
LC Manley  
Don Creasia  
Donna Mosby  
Charles Washington  
Jeff Hill  
James Lewis  
Karen Galloway  
Bob Craig  
Susan Kaplan  
Brenda Vowell  
La Freta Dalton

Cheryl Smith  
Jack Hanley  
Bill Murray  
Karl Markiewicz  
Paul Charp  
Bob Capell  
Art Stuart (sp)  
John Steward  
Wesley Howard  
Mike Knapp  
John Million  
Fay Martin  
Jerry Pereira  
Tim Joseph  
The recorder is Ken Ladrach

### **Agenda Review, Correspondence, and Announcements**

Kowetha Davidson announced that there were some minor changes in the agenda since the pre-meeting mailing, primarily in the order of reports from the work groups. The Public Health Assessment Work Group will give its report first, followed by a public comment session. The Public Health Assessment Work Group session will include presentations by Paul Charp and Karl Markiewicz. Later in the afternoon the Subcommittee will hear and vote on the recommendations of each work group. This will be followed by the usual unfinished business/new business items and identification of action items portions of the meeting. With no additional changes identified the agenda was considered finalized.

Kowetha Davidson drew attention to the correspondence received and sent out included in the pre-meeting mail out. Included in today's handout material is a letter to Owen Hoffman regarding the comments on the minutes for the June 11, 2001 Subcommittee meeting.

Kowetha Davidson announced that attendees could sign up for the meal at the evening break by completing the signup form provided and returning the form and money to Donna Mosby.

Barbara Sonnenburg asked if the Subcommittee had received a response from Dr. Jackson. Kowetha Davidson responded that the Subcommittee had not received a response from Dr. Jackson regarding the letter sent to him by the Subcommittee.

### **Approval of June 2001 and December 2001 Meeting Minutes**

#### June 11-12, 2001 Subcommittee Meeting Minutes

La Freta Dalton drew attention to the final minutes for the June 11, 2001 Subcommittee meeting provided in the handouts. The comments on page 44 of the minutes were addressed as requested by the Subcommittee. La Freta Dalton reviewed the meeting videotapes and stated that the comments from the member of the public are incorporated verbatim. Comments and corrections submitted by letter by Owen Hoffman were incorporated in the minutes as appropriate and Owen Hoffman's letter submitted is included in the Subcommittee members' hand out materials. La Freta Dalton also noted for the Subcommittee that Owen Hoffman's comment letter is included with the meeting minutes in the file at the ATSDR field office, with a sheet noting that there are other documents there with the meeting minutes available for the public to review.

Bob Craig moved that the final minutes of the June 11-12, 2001 Subcommittee meeting be approved. The motion was seconded. A vote was taken by voice with none opposed.

December 3-4, 2001 Subcommittee Meeting Minutes

Kowetha Davidson brought the December 3-4, 2001 subcommittee meeting minutes to the attention of the Subcommittee and asked for any additional comments on the December meeting minutes.

Discussion:

James Lewis repeated a request he previously submitted to La Freta Dalton about itemizing action items arising from and statements made during a presentation given in the December 2001 Subcommittee meeting by Jerry Pereira about issues the Subcommittee raised for discussion with the management team concerning problems they were encountering in their efforts. James Lewis clarified that the Subcommittee was having difficulty identifying what Dr. Jackson stated and the action items from the meeting. James Lewis expressed concern that the Subcommittee meeting minutes were not detailed enough to capture action items and other key points arising from meetings. La Freta Dalton added that the videotapes serve as the verbatim record of the Subcommittee meetings.

Jerry Kuhaida moved that the minutes of the December 3-4, 2001 Subcommittee meeting be approved. The motion was seconded. A vote was taken by voice with none opposed.

La Freta Dalton noted for the Subcommittee that a new recorder is working with the Subcommittee and asked that subcommittee members state their name for the record when making comments.

**Status of Action items**

Kowetha Davidson proceeded to the status of action items by review of the action items matrix.

- La Freta Dalton addressed the Subcommittee recommendation that the ATSDR create an article for the local media on the screening and stated that this issue will be addressed in today's meeting during the Public Health Assessment presentations.
- La Freta Dalton addressed the web site design format issue stating that recent modification to the host web site dictated slight changes to Subcommittee web site design no. 3 (changes in colors).
- La Freta Dalton addressed the Subcommittee recommendation that ATSDR determine the feasibility of review of the ORHASP minutes to document historical concerns stating that this issue will be addressed in today's meeting.
- La Freta Dalton addressed the action of the Subcommittee and ATSDR to follow up with Dr. Jackson on outstanding issues resulting from his presentation. Kowetha Davidson sent a follow up letter to Dr. Jackson and Bill Carter followed up with Dr. Jackson as well. There has been no response received from Dr. Jackson to either contact.

There were no further questions or comments on the action items.

### Administrative Process Update

Kowetha Davidson proceeded to a presentation by Jerry Pereira updating the administrative process, a follow up to the presentation he made at the December 2001 Subcommittee meeting.

Jerry Pereira referred to a hand out to the Subcommittee members that lists concerns and issues and associated ATSDR responses, themes common among the concerns generally expressed. Specifically the presentation addressed the concern about a need for administrative staff at the ATSDR field office. The ATSDR has agreed to hire a part time person for the field office, a local individual will be hired to assist with administrative matters. The position will be advertised in the local newspaper. The time frame for implementation is expected to be the immediate future, which was estimated by Jerry Pereira to be within the next month or two months. Work tasks for this position would be work group meeting minutes, logistical support at the office, assisting Bill Murray with other administrative needs.

#### Discussion:

James Lewis asked the following questions on the concerns hand out:

- Please expand on the meaning of the entry “Completion of necessary administrative guidelines and procedures should facilitate more attention to technical issues.” Jerry Pereira’s response was that, in part, the new format of the Subcommittee meetings should facilitate more attention to technical issues. Hopefully the meeting format changes will allow more effective use of time.
- Please expand on the need indicated previously to get approval for an option of the Subcommittee convening four-hour meetings. La Freta Dalton responded that the charter would have to be revised to permit shorter meeting formats. Committee management will suggest the necessary charter revision in June or July 2002. James Lewis made the follow up note that four-hour meeting formats can be very effective for communicating to the community, which is very important.

Kowetha Davidson asked the following question on the concerns handout:

- Please explain the meaning of the entry that Jack Hanley is appointed site lead. Jerry Pereira responded that Jack Hanley is responsible directly for whatever happens at the site from a scientific perspective. Jack Hanley is responsible for completion of the health assessment. Technical aspects are the responsibility of Jack Hanley, administrative issues and logistics are the responsibility of Sandy Isaacs and Jerry Pereira.

David Johnson asked for confirmation that Jack Hanley is the lead. Jerry Pereira confirmed that Jack Hanley is the lead for the technical aspects of the work.

James Lewis asked hypothetically, if a situation arises in which difficulties between administrative branches of the ATSDR impedes timely progress of the Subcommittee on an issue, can the Subcommittee turn to Jerry Pereira for assistance? Jerry Pereira responded affirmatively, with the clarification that the appropriate steps have all already been taken. Kowetha Davidson added that it is also necessary for Subcommittee members to keep the chairperson informed of issues that need resolution.

Bill Murray added that Subcommittee members can also get assistance communicating with ATSDR from the ATSDR field office.

There was no further discussion on the administrative process update.

## **Work Group Presentation Sessions**

### **PUBLIC HEALTH ASSESSMENT WORK GROUP PRESENTATION**

Kowetha Davidson introduced the presentation of the Public Health Assessment Work Group stating that the acting chairperson of the work group asked that a smaller group within the Public Health Assessment Work Group draft the recommendation. A minority recommendation was presented in that smaller group. The recommendation adopted by the Public Health Assessment Work Group and presented by the work group today is the majority recommendation of the Public Health Assessment Work Group and is brought to the Subcommittee today. The presentation of the Public Health Assessment Work Group was made by James Lewis.

#### **Presentation by James Lewis**

James Lewis began by introducing the members of the ad hoc committee that prepared the draft recommendation for the Public Health Assessment Work Group:

- Bob Craig,
- L. C. Manley,
- Linda Gass,
- James Lewis

Barbara Sonnenburg asked James Lewis to briefly point out to the Subcommittee during his presentation any instances when the minority recommendation differs from the presentation being made, since the author of the minority recommendation is not in attendance. James Lewis stated that he will capture those differences during the presentation under areas of concern. He also noted to the Subcommittee that the ad hoc committee reviewed a large amount of documentation in the course of their work.

### **OVERVIEW OF RECOMMENDATIONS**

James Lewis began by presenting to the Subcommittee a display depicting an overview of the effort and objectives of the ChemRisk work in the past:

- ChemRisk objective 1 – Rapid identification of situations that have produced doses or health risks to exposed individuals and/or populations that are clearly below the

minimum risk levels of concern established by the Oak Ridge Health Agreement Steering Panel. These were identified as items that did not warrant pursuing.

- ChemRisk objective 2 – Rapid identification of situations that have produced doses or health risks to exposed individuals and/or populations that potentially impact the health of the community. These were identified as items that needed to be pursued.

Charles Washington asked where the risk levels were obtained from, the ACGIH? James Lewis deferred to Kowetha Davidson for a specific response and also stated that the information that the ad hoc committee reviewed has also been available to the Subcommittee members and that the current presentation now would not go into the technical detail of the reports reviewed. Kowetha Davidson added that risk levels used in health assessments generally use reference doses and cancer risk factors established by the EPA as a baseline for determining whether risk levels are above or below concern. Charles Washington pointed out that risk levels established by different authorities are different.

James Lewis' presentation then identified that there are two major recommendations from the Public Health Assessment Work Group to the Subcommittee about the health assessment screening process.

One recommendation concerns the period before 1990, which is linked to the ORHASP effort of the State of Tennessee to conduct a comprehensive data review. This recommendation went from the ad hoc committee to the Public Health Assessment Work Group and is brought to the Subcommittee today for vote. There were minority position challenges to the work group recommendation. The presentation identified categories of information and input that were reviewed and considered in formulating the work group recommendation:

- The ORHASP effort,
- ATSDR technical review comments,
- ORRHES members' review and assessment of technical documents, and
- Public issues/concerns expressed.

A flow process graphic was displayed to the Subcommittee depicting an overview of the ATSDR health assessment screening process (presented by Jack Hanley in earlier meetings), which was attached to the written recommendation before each Subcommittee member.

The second recommendation concerns the period after 1990, for which there are not yet health assessment findings. The work group is satisfied that the process, as defined, appears to be sound. The process was depicted to the Subcommittee with a flow process graphic, which was attached to the written recommendation before each Subcommittee member.

On the subject of identifying issues and concerns, a timeline was presented depicting the period of time that the Subcommittee has been working on public health assessment issues and it was noted that this time period spans January 2000 through February 2002. During this period, most of the concerns that have been raised were raised very recently (toward the end of February 2002). James Lewis stressed the importance of identifying issues in a more timely manner rather than late in the Subcommittee review process. As part of this, he

stressed that it is essential that supporting documentation related to issues and concerns be identified and brought forward in a timely manner so that the Subcommittee has adequate time to review it and take it into consideration in their public health assessment review process. The ad hoc committee often addressed issues raised that had been addressed previously. Therefore, it was suggested that previous actions taken be identified and publicized so that issues that have been addressed are not revisited repeatedly. A Subcommittee member made a request for copies of the transparencies displayed by James Lewis during his presentation. James Lewis stated that they could be made available to Subcommittee members.

### SPECIFIC RECOMMENDATIONS

The presentation then addressed the specifics of each of the two recommendations from the Public Health Assessment Work Group.

#### Recommendation 1:

The Subcommittee endorse the ATSDR screening process for determining the contaminants of concern for past exposure (1944 – 1990 data). This endorsement begins with using the State of Tennessee’s screening process and its associated findings that identified the Oak Ridge Reservation (ORR) offsite releases that warrant further evaluation. This endorsement is based on the Subcommittee’s collective review and understanding of:

- The ATSDR’s screening presentations to the Subcommittee,
- ATSDR’s independent technical reviewers’ comments,
- The Subcommittee members’ review and assessment of the technical documents, as needed, and
- Related public concerns or issues as needed.

Other contaminants will be added if they are supported by a scientific rationale and relevant data, and are deemed to be credible by the Subcommittee after review and input from ATSDR.

Bob Eklund asked when the Subcommittee will vote on the recommendation. Kowetha Davidson responded that the vote will occur later in the meeting to allow time for discussion and possible public comment.

Continuing the presentation, James Lewis emphasized that the public health assessment process has been presented before the Subcommittee in numerous meetings and that the documentation of those meetings proceedings are contained within the files of the ATSDR field office. The content of the series of meeting presentations, including questions and issues raised, were reviewed by the ad hoc committee as part of their effort to formulate the recommendations of the Public Health Assessment Work Group. A graphic was displayed identifying various presentations to the Subcommittee and its work groups on the subject of the public health assessment process.

James Lewis next addressed the quality of documentation, its adequacy and accuracy, the availability of the documentation to the public, and whether all documentation has been brought into the public health assessment process. These questions have been a general area



of many concerns raised in the public health assessment process. To address this, Tim Joseph was asked to present an overview of how the data were captured.

### **Presentation by Tim Joseph**

Tim Joseph presented and discussed a single graphic depicting a flow process diagram of the ORHASP data process.

#### Overview

ORHASP was a seven year project during which 4 years were spent accessing and collecting data. The prime contractor to the State of Tennessee was ChemRisk. ChemRisk was supported by Shonka & Associates, which was the subcontractor that searched for data.

ChemRisk and Shonka & Associates accessed data pertaining to three sites:

- X-10,
- Y-12,
- K-25

As relevant data and documents were identified at these three sites copies were requested from the site contractor. A copy was submitted to the ChemRisk/Shonka & Associates project file, a second copy was kept by the site contractor as a record of what was provided, and a third copy went to the public reading room in Oak Ridge. This gathering process was conducted for about three years. The copies of documents in the possession of Shonka & Associates were located in either their California office or their Ohio office. Each document identified was entered into an abstracted bibliography, whether or not the document was used. Not necessarily all documents identified were used in the ORHASP. Many documents were not used but were listed in the abstracted data base.

At project termination, the abstracted bibliography data base was put on a compact disk (CD) available for the public. The abstracted data base contains all of the bibliographic entries gathered, which includes numerous documents that were identified but not used in ORHASP. The CD also contains the full content of each of the project reports that were prepared as part of ORHASP and the full content of interviews. Two types of interviews were conducted by ChemRisk: telephone interviews and interviews with retired workers. All of the telephone interviews are on the CD, in complete form in the data base field named "abstract" on the CD. The interviews with retired workers were conducted onsite and included discussion of any classified information without restriction. However, the interviewer's written notes from those interviews had to be reviewed for classified content before being released to the ChemRisk interviewer. During review, classified information was redacted (taken out) before the notes were released to ChemRisk. The original interview notes and a copy of the redacted notes were filed onsite by the site contractor. All of the redacted interviews are included on the CD available for the public.

The CD did not include the actual content of the documents that ChemRisk used in their work. In order to make the documents themselves available for the public, all 142,000 pages of the documents used by ChemRisk were all scanned electronically and placed on CDs (set of 18 CDs) and online in the form of the Comprehensive Epidemiologic Data Resource (CEDR). Tim Joseph provided a set of the 18 CDs to the staff of the ATSDR field office.

Users should remember that not all documents identified in the ChemRisk abstracted bibliography are in the 18 CD set because not all of the documents were used by ChemRisk in their work. At the same time, the State of Tennessee decided to make all of the data that ChemRisk gathered during their work on the ORHASP available for the public. The state made the data accessible in Nashville for two years and then submitted it all to the Tennessee State Library archive. The archive materials are being placed on microfiche and the documents are also available for the public in a monitored area. This material archived in the state library is the only complete copy of the ORHASP files.

Questions:

Jerry Pereira asked about the documents that ChemRisk did not use, what did they do with those documents? Tim Joseph clarified that Shonka & Associates identified documents but did not make judgements about whether they would be used or not, ChemRisk made those judgements.

Bill Murray pointed out that documents from the telephone and personal interviews are available on the single CD and that he has printed those himself, despite the reports by some persons that the interviews can not be found.

Susan Kaplan asked if the CEDR data base is on the web and if copies of the ORHASP data process flow diagram sheet are available? Tim Joseph confirmed that the CEDR is on the internet and provided copies of the diagram sheet to the Subcommittee.

Bob Craig asked Bill Murray if the CD has the redacted interviews. Tim Joseph explained that hand written telephone interviews were loaded into a computer and the handwritten notes were discarded. The typed computer notes of interviews are more complete than the hand written ones would have been.

Elmer Akin asked if it is true that no chemical names remain classified. Tim Joseph clarified that information that is still classified can be a chemical name or a process that uses unclassified things in a way that becomes classified. For example an unclassified chemical used at a building in a process can then become classified. How it is used and what process it is used in causes it to be classified. Elmer Akin asked if there are any chemicals that by name alone the Subcommittee does not know of because they are classified. Tim Joseph responded that there are not.

Elmer Akin also asked that this explanation by Tim Joseph be captured from the video recording of the meeting to be made available to the community for clarification. La Freta Dalton responded that she will pursue that, and reminded everyone that the videotapes of the Subcommittee meetings are available for the public to view. James Lewis suggested also capturing the same information in a written form.

Kowetha Davidson noted at this point that five minutes remained before the scheduled public comment period was to begin.

David Johnson recognized the efforts of Tim Joseph, noted the comments of Elmer Akin and James Lewis about capturing Tim Joseph's presentation for the public, and stated that it is important to put a video copy of the presentation and associated written comments in the Oak Ridge High School and public library so that people with concerns about access to information will have access to the explanation presented. Kowetha Davidson added that the Subcommittee could also make an effort to inform the public that the information is available for the public at the ATSDR field office.

Charles Washington commented that although the complete list of names of chemicals used is available you have to be aware of the manner in which chemicals were used in addition to their names to adequately assess potential hazards.

Susan Kaplan commented that the video capture would need more context associated with it to communicate effectively to the public.

James Lewis commented that L.C. Manley and Jerry Kuhaida reviewed some of the interviews during the ad hoc committee's effort and asked them to share their findings. Jerry Kuhaida responded that he was interviewed about eight years ago himself about potential releases via air and water. He was working on the RI/FS and found some ChemRisk reports and made some use of them during the RI/FS effort. Jerry Kuhaida stated that he provided reference to documents that could provide input to ORHASP but thought personally that the information that came out of the ORHASP process was lacking in its consideration of potential releases to the environment.

*Kowetha Davidson at this time began the scheduled public comment period. Following the public comment period the presentation of James Lewis from the Public Health Assessment Work Group continued.*

The next part of the presentation addressed concerns and issues raised during the ad hoc committee's work. James Lewis presented a minority position list of issues and concerns submitted to the ad hoc committee. The list displayed was identified as submitted by Linda Gass on January 14, 2002. Issues raised included:

- ATSDR has not performed an independent critical review of the State of Tennessee Department of Health data as intended by Congress,
- The Oak Ridge dose reconstruction was not originally peer reviewed,
- The ATSDR contracted review of the Oak Ridge dose reconstruction has not been adequate,
- The quality of documentation and the adequacy of the documentation.

David Johnson asked why the displayed list of issues was labeled "Issues raised by Linda Gass." James Lewis responded that Linda Gass submitted her issues in writing and it is presented here as a minority position of issues submitted.

Additional issues raised by Bob Eklund and Harry Williams were presented. These related to purge cascade release estimates. The ad hoc committee found reference to independent calculation review.

Additional issues raised by Kathy Theissen in a letter to the Subcommittee dated January 16, 2001 contained five major issues including:

- A number of contaminants were not evaluated quantitatively during the Oak Ridge feasibility study or dose reconstruction,
- No rationale was provided for not doing quantitative evaluation,
- Kathy Theissen did not have access to information on the material used and released for the screening of contaminants,
- Reports did not qualify fluorine or fluoride releases or reference sources of information, Investigation by the ad hoc committee of these issues raised has not yet resulted in finding of significant concerns.

Additional issues raised by Owen Hoffman were presented that related to the incorporation of SENES review comments and recommendations in the Phase I report of ORHASP. Certain recommendations provided to the ORHASP panel were reportedly not implemented in the Phase I report. The ad hoc committee review indicated that the majority of the comments were captured in the 1996 Task 7 ORHASP report that established the new screening process. The ad hoc committee determined that the work conducted under the ORHASP panel was technically credible and conducted independent of the Department of Energy. James Lewis concluded the presentation of these issues with a significant note from the minutes of one of the meetings of ORHASP on November 15-17 in which Kathy Theissen expressed that no grievous errors were discovered for the dose reconstruction feasibility study but additional contaminants might need to be added such as nickel, beryllium, and \_\_\_\_\_. This statement indicated to the ad hoc committee that there were no significant concerns.

#### **GUIDELINES AND PROCEDURES WORK GROUP PRESENTATION**

Kowetha Davidson reported for the Guidelines and Procedures work Group that the work group has not met since the December 3-4, 2001 Subcommittee meeting since there were no tasks for the work group, but that some issues have been raised that may be tasked to the work group including examining how the Subcommittee's work groups are functioning. Kowetha Davidson has asked Karen Galloway, who has agreed, to chair the Guidelines and Procedures Work Group in the future. This work group includes David Johnson, L. C. Manley, and Donna Mosby and one other Subcommittee member that will be identified during the meeting.

#### **AGENDA WORK GROUP PRESENTATION**

Barbara Sonnenburg reported that the work group will recommend that the Subcommittee vote to bring in principal investigators of DOE Worker Medical Exposure and Surveillance Programs to make presentations. James Lewis originated the idea. Bill Murray and Jack Hanley have made initial contact with the individuals. A vote of the Subcommittee is needed to arrange to pay for travel expenses for the program leaders to visit the Subcommittee. James Lewis explained that he thinks the presentations would be helpful to the Subcommittee to hear what the programs are like, how they are working, and what conclusions are coming

out of the programs. It would be an opportunity for the Subcommittee to learn from the processes that these programs have been through.

Jack Hanley stated that he has followed up with the surveillance programs. These programs are former worker surveillance programs and are not the same as the public health assessment process of the Subcommittee. Jack Hanley identified three programs:

- The investigation of former construction workers by the University of Cincinnati,
- The investigation of former gaseous diffusion plant workers by Queens College, NY,
- The surveillance of beryllium workers by Oak Ridge Associated Universities.

If the Subcommittee decides that presentations from these investigators will be helpful the ATSDR will work on arrangements for a Subcommittee meeting in the near future. Jack Hanley specifically mentioned Eula Bingham the principal investigator of the University of Cincinnati program and described her as very credible.

James Lewis commented that he thinks it is critical to have these visitors before the Subcommittee.

Bob Craig commented that the Subcommittee have visitors from the ORAU study first to discuss the process they have experienced before taking the step of bring in the visitors from New York and Cincinnati.

Barbara Sonnenburg closed the Agenda Work Group presentation by mentioning that work group chairpersons should forward to her as soon as possible those items to be included in the agenda of the next Subcommittee meeting.

### **COMMUNICATIONS AND OUTREACH WORK GROUP PRESENTATION**

James Lewis reported that the Communication and Outreach Work Group met briefly last week during which attending members of the work group explored the current version of the Subcommittee's web site and discussed the current version of the "concern form" of the Subcommittee. The work group will likely make a recommendation to the Subcommittee regarding the "concern form." The work group did not get to review of the Subcommittee's fact sheet.

La Freta Dalton drew attention to the fact sheet before the Subcommittee members stating that it reflected changes discussed during the December 3-4, 2001 Subcommittee meeting. The fact sheet now displays bulleted ATSDR functions and activities and reflects enhanced readability. The comment sheet reflects input from the Communications and Outreach Work Group provided at the last Subcommittee meeting. The comment sheet incorporates information for Bill Murray including the mailing address for mailing the form. Other suggestions made will take more time to incorporate but the content of the comment sheet is ready for of the Subcommittee to consider. A tri-fold mailer format is being considered for the comment sheet (Tab 14). La Freta Dalton noted that the pilot testing of the Subcommittee's web site hosted by ERG is from February 11<sup>th</sup> through February 22<sup>nd</sup>, followed by incorporation of comments by ERG on the web site, and a second pilot testing period is from March 11<sup>th</sup> through March 22<sup>nd</sup>. Additional comments will be incorporated on

the web site by ERG from March 22<sup>nd</sup> through April 5<sup>th</sup>. The ATSDR web site committee will then review the web site to start the approval process. Final posting of the web site hosted by ATSDR is not scheduled yet but the current estimate is that the web site will be available for the public in May or June of this year.

Elmer Akin commented that EPA and ATSDR are working on a pamphlet for the public that explains the differences and similarities between the EPA and ATSDR health assessment processes. This pamphlet should be available soon and an electronic copy could be placed on the Subcommittee web site.

Kowetha Davidson summarized the status of the Subcommittee fact sheet and comment form as having their content completed and input received to date incorporated.

James Lewis commented that it is not advisable to separate the name of the commenter raising an issue from the issue raised on the form. Emphasis was placed on the need to keep the name on same side of the page as the comment/issue raised.

#### **HEALTH EDUCATION NEEDS ASSESSMENT WORK GROUP PRESENTATION**

Donna Mosby reported that the Health Education Needs Assessment Work Group has made significant progress:

- Initial analysis of 400 phone surveys completed, additional analyses pending,
- Written material for focus groups is nearly complete, and has been submitted to the George Washington University IRB. The approval process will begin in the next six weeks and must be completed before people can be solicited for the focus groups.
- IRB approval process timeline:
  1. February 12<sup>th</sup> – materials submitted to the George Washington University IRB,
  2. Early March – IRB review comments expected,
  3. To MCP for approval within seven to ten days of George Washington University IRB approval,
  4. Submit to the Tennessee DOH IRB for approval,
  5. Following Tennessee IRB approval send out newspaper ads, radio scripts, fliers, posters for the solicitation period (anticipate two weeks during March),
  6. After people are assigned to focus groups hope for focus groups to be conducted from April 4<sup>th</sup> through April 9<sup>th</sup>.
  7. If this timeline is not successful, the schedule slips to early May, which is not considered a desirable time period for the focus groups.

A range of focus group topics have been identified:

1. Mid-life women,
2. Long-term elderly residents,
3. People who have respiratory disease,
4. People who have cancer,
5. People who have heart disease,
6. Ill workers,
7. People who have worked or are working at the Oak Ridge Reservation,
8. Three distinctly different resident groups.

James Lewis asked whether the work group members have identified any technical issues to date from interviews that may have any impact on the work of the Public Health Assessment Work Group. Such information will be provided as it arises.

Elmer Akin asked if the focus group selections are final and whether it was intended that the selections be mutually exclusive since it seemed that people could fit in more than one focus group selection. Donna Mosby responded that people will call in for assignment to a focus group and will be assigned to the most appropriate focus group based on information obtained about the caller.

### **MISSION STATEMENT WORK GROUP PRESENTATION**

Karen Galloway reported that the work group has met a total of four times. At the December 3-4, 2001 Subcommittee meeting the Subcommittee voted on and approved the “vision” and “mission” portions of the Subcommittee mission statement. There are three “goals and objectives” added for the Subcommittee to vote on today. The three goals and objectives before the Subcommittee for vote are:

- Provide informed recommendations to ATSDR on their formal Public Health Assessment of Contaminants of Concern released by the Oak Ridge Reservation,
- Identify public health issues, health education needs, and health care resources (both available and needed),
- Ensure that the findings and recommendations of ATSDR’s public health activities are presented in a manner which meets the needs of various segments of the community (e.g., physicians, elderly, etc.).

Charles Washington asked whether the work group gave thought to particulate emissions in the “mission” portion of the Subcommittee mission statement. Kowetha Davidson stated that particulate emissions would not be excluded by the wording of the mission statement and added that the “mission” portion of the statement had been previously approved by the Subcommittee at the December 3-4, 2001 Subcommittee meeting.

### **Public Comment**

Kowetha Davidson began the scheduled public comment period asking that speakers identify themselves by name.

The first public comment came from Art Stuart, a resident of Oak Ridge since 1944, retired from Y-12 after 40 years, 25 years working with Health Physics and 15 years working with the Metal Preparation Division and Uranium Chemistry. Art Stuart stated that he was one of many workers that were badged at all three Oak Ridge plants and who circulated from plant to plant during their work. He asked how the time spent at the different plants will be weighted in dose calculations for the health assessment and how the amounts of time be determined. Jeff Hill responded that perhaps the question is actually directed toward the

Energy Employees Occupational Illness Compensation Program, specifically the Special Cohort group of that program, which is the K-25 workers and is not what this Subcommittee is working on. Jeff Hill offered to share information with Art Stuart about that program during the next break. Art Stuart's additional question was how can there be a separation between worker exposures and exposures to the public from environmental releases. Kowetha Davidson responded that the Subcommittee is not addressing worker exposures on site.

There were no additional comments from the public.

### **Public Health Assessment Work Group Session**

Kowetha Davidson noted for the Subcommittee that Paul Charp has previously brought the ATSDR community concerns data base to the Subcommittee's Public Health Assessment Work Group for presentation and discussion and has taken suggestions from the work group back to ATSDR to modify the data base for the Subcommittee's needs.

#### ATSDR Community Concerns Data Base Presentation (Paul Charp)

ATSDR has a Federal Facilities Information Management System (FFIMS). Within the data base system there is a module under development for each federal facility. A portion of the module for Oak Ridge, the community concerns data base, was presented in the Subcommittee meeting. The ATSDR does not yet have the entire data base for Oak Ridge loaded into the FFIMS module. ATSDR has tens of thousands of sample data points in Atlanta to be loaded. Paul Charp brought the community concerns data base to the meeting for the Subcommittee because capturing community health concerns has been an item of concern expressed to ATSDR because there has not been a computerized records and reporting mechanism for capturing health concerns expressed about Oak Ridge. The community concerns data base for Oak Ridge will provide the mechanism for recording concerns and reporting what concerns have arisen. Paul Charp's objective during the meeting is to display how the data base works and what it does at this point in its development (beta test status).

Paul Charp proceeded to display to the Subcommittee actual computer screen images within the community concerns data base. The data entry screens for entry of name, medical condition, conversation narrative, data entry date, follow up actions and dates, appropriate recommendations, follow up circumstances, contact information, caller history, were displayed for the Subcommittee. Pull-down menus were sequentially displayed to depict the range of options available to the data base user for entering concerns information.

Emphasis was placed on the ability to enter the data in a way that maintains identity and medical confidentiality as needed and the ability to search the entire data base on the basis of any of the data entry fields. Data entry fields explored included:

- Time spending patterns,
- Food consumption habits,



- Sources of water used,
- Whether the person has a health effect potentially related to the site,
- Physician diagnoses,
- Information for ATSDR to contact the person,
- Types of health effects/symptoms,
- The location where the person lives,
- The age of the person,
- Local population profile information,
- Substance/contaminant exposure information,
- Gardening habits,

ATSDR is developing this module with the Public Health Assessment Work Group. Some of the work group's suggested changes were implemented and some were not implemented. This module is the tool ATSDR will be using to document community concerns in and around the Oak Ridge site.

Susan Kaplan asked whether the community concerns data base will be online and whether people will be able to enter information into the data base. Paul Charp responded that the data base will not be available online. He explained that the ATSDR is developing a form entitled "Individual Conversation Information" that will be available to the community to be filled out. All entries into the data base will be performed at the ATSDR offices locally or in Atlanta. Public access to the data base itself will not be allowed because of the need to maintain confidentiality of the data. Susan Kaplan suggested that there be a way for some of the data to be available to the public for performing queries of the data base.

Elmer Akin asked whether the ATSDR has a backlog of data to be loaded into the data base. Paul Charp responded that the ATSDR does have a backlog of information in meeting videotapes and concerns expressed to Bill Murray and Jack Hanley by telephone and in person, but entry of this information will not begin until ATSDR is comfortable with the status of the module.

Elmer Akin also asked whether the community concerns data base is intended more for citizens' benefit or for the benefit of ATSDR, is the information to be used to lead to ATSDR actions or is it to serve as a repository for recording the information? Paul Charp responded that the data base will help ATSDR to focus its health assessment needs based on community concerns and it will demonstrate to the community the types and numbers of concerns that ATSDR has received. The data base is not a one-way flow of information.

Elmer Akin also asked how an individual would proceed to have information they wanted to offer taken and entered into the data base. Paul Charp pointed out that the specific process will be the decision of Bill Murray and Jack Hanley. Jack Hanley explained that at this time the ATSDR field office is working on getting a version of the data base in the field office and the forms for submittal of information by the public. In addition the ATSDR can capture comments, concerns, and issues expressed in work groups meetings and Subcommittee meetings as a means for entering relevant information into the community concerns data base and the Communications and Outreach Work Group has developed the concern form for

submittal of comments to the Subcommittee. The data base is a way to capture community concerns, document them, and track the process of responding to the comments.

Elmer Akin followed up commenting that the community perception of the data base and what their expectations are about what ATSDR does with it should be considered carefully.

Kowetha Davidson asked if the Subcommittee or one of the work groups could obtain a query of the data base if such a query were requested by an individual. Paul Charp stated that an individual would need to make the request to the Subcommittee.

James Lewis expressed his appreciation for the progress made on the data base and noted that two submittal forms have been discussed, one established by the Communications and Outreach Work Group and one introduced by Paul Charp during his presentation, creating the potential for inconsistent levels of detail being recorded. Jack Hanley responded that the data base form discussed by Paul Charp is a form to be used by ATSDR staff in an interview situation to prompt them to ask related questions. The work group form is for an individual to complete to submit a comment in writing. La Freta Dalton commented that the Subcommittee's "concerns form" will be available for the public while the ATSDR module form will not be available.

Charles Washington remarked that the example of the data base presented does not include many other questions that are relevant to potential past exposure circumstances. For example, whether a garden was kept for food, whether a family member worked at the plants, whether as a worker an individual wore the same shoes at work and offsite, what kind of work an individual performed at the site and how they performed it. Paul Charp responded that the data base includes some of the questions that relate to gardening and water consumption patterns and that open fields could be used to enter other specific items of relevance to the individual's potential exposure circumstance. Inclusion of the noted question items will be discussed within ATSDR.

Susan Kaplan suggested strongly that the public should have access to the community concerns information while protecting information that is confidential because the public will have the expectation that they can access information that has been expressed as a concern from the community. Mark Evans (ATSDR) responded that ATSDR will present community concerns information to publicize the concerns information without jeopardizing confidentiality.

Jerry Pereira asked whether the data on Subcommittee concerns forms submitted by the public will be entered into the community concerns data base. Kowetha Davidson stated that her understanding was that the concerns form information would be entered into the data base. James Lewis added that a major comment heard from the public is that the information/comments that they submit are not addressed or used in the process. The public needs to see their comments and concerns summarized in writing rather than never seeing them again.

ATSDR Radiation Screening Process Presentation (Paul Charp)

Paul Charp proceeded with a presentation about the ATSDR radiation screening process. The presentation began with a display of the screening process in a flow process diagram. The process has been in use by the ATSDR since 1988 and is typical of what is used for a site. The process begins with consideration of the radiation source term, which is the contaminant release point. For example the source term is generally one of three types of source term:

- Naturally occurring radioactive material (NORM),
- Technologically enhanced NORM (TENORM),
- Man-made radioactive materials.

Two exposure categories are defined in the screening process:

- External radiation exposure,
- Internal radiation exposure.

External radiation exposure includes consideration of gamma ray radiation and beta particle radiation because of their penetrating ability. External radiation exposure rate is determined and is used in conjunction with information about the amount of time spent in the radiation field to develop the effective dose. Criteria used by ATSDR to develop dose estimates are obtained from publications of the International Commission on Radiological Protection (ICRP) and Federal Guidance Reports (FGR) 11, 12, and 13.

Internal radiation exposure includes consideration of alpha particle radiation (inhalation and ingestion hazard), beta particle radiation (inhalation, ingestion, and skin deposition hazard), gamma ray radiation. Criteria used by ATSDR to develop dose estimates are obtained from publications of the National Council on Radiation Protection and Measurements (NCRP) and FGR 11, 12, and 13, DOE 5400 series orders, DOE and NRC 10 CFR regulations, and EPA 40 CFR regulations.

The external dose and internal dose is combined as a total dose estimate. The total dose estimate is compared to the ATSDR MRL screening value (minimal risk level). The ATSDR MRL is 1 millisievert per year (mSv/yr) or 100 millirem per year (mrem/yr) minimal risk level. The total dose estimate is also compared to the nominal average background radiation dose of 3.6 mSv/yr (360 mrem/yr), which includes radon exposure. If the total dose estimate is less than the MRL the dose is determined not to be a public health concern. If the total dose estimate exceeds the MRL it is compared to the background. If the total dose estimate is less than the background dose the total dose estimate is determined not to be a public health concern. If the total dose estimate exceeds the background dose it is categorized in the following manner:

- Total dose between 360 mrem/yr and 5 rem/yr – no apparent public health concern because review of the scientific literature indicates that it is not clear there is a hazard below 5 rem/yr,
- Total dose between 5 rem/yr and 25 rem/yr – ATSDR evaluates the total dose based on site-specific conditions to determine if there is a public health concern.

- Total dose above 25 rem/yr – ATSDR implements a public health advisory. Historically ATSDR has issued five public health advisories on radiation issues. This concluded the presentation on the ATSDR radiation screening process.

Bob Eklund asked whether the 5 rem/yr criterion is applied to adults or children. Paul Charp responded that this criterion is generally applied to all individuals but that ATSDR does consider the potential for extra sensitivity of subpopulations to radiation. The MRL is included to take potential sensitivities into consideration. The total dose estimate is developed using age-specific dose conversion factors.

Jeff Hill questioned the appropriateness of 5 rem/yr resulting in the determination that there is no public health concern. Paul Charp confirmed the criterion and repeated that the screening process presented is a general process.

Kowetha Davidson brought up the example of intake of iodine and Paul Charp discussed the difference between whole body dose and thyroid dose.

Charles Washington pointed out that researchers are studying the possible effects of nuclear workers exposed below 5 rem/yr. Bill Murray joined the discussion on studies of nuclear ship yard workers and added that the findings of these studies are not clear at doses below 5 rem/yr. Bill Murray mentioned the NIOSH study of nuclear ship yard workers in Portsmouth Naval yard in Maine, which is still in follow up. Cohorts of DOE workers studied have shown excess cancer mortality and dose response in several of the studies. Paul Charp will explore the dose levels at which these studies have found excess effects and inform the Subcommittee at the next meeting.

Don Creasia asked how the MRL can be less than the nominal level of Background in the screening process. In response Paul Charp stated that the MRL dose level is a level above background. It was noted that the screening process flow diagram as presented depicts the MRL as a smaller value than the background value and is confusing as presented. Paul Charp will discuss revising the screening process diagram at ATSDR. Karl Markiewicz added that the MRL values for non-radiological contaminants may be below background levels but that the MRL is used as a reference level at which there is no concern of hazard. Paul Charp noted for the Subcommittee that he had brought ATSDR toxicity profiles for ionizing radiation, uranium, and iodine.

Susan Kaplan asked whether health study results indicate that women overall as a group are different in their health response than males. Paul responded that that finding was for induction of thyroid cancer and that the standard dose conversion factors are based on age but not by gender.

Elmer Akin suggested that because of the concerns being expressed about the screening process diagram showing an MRL that is less than background and indicating a “no public health concern” criterion of 5 rem/yr the diagram needs revision before it is put into use in the Oak Ridge health assessment process. Paul Charp will have the MRL and the 5 rem/yr

criterion in the diagram reviewed at ATSDR and bring a revision back before the Subcommittee.

Jeff Hill commented that few people in the community are likely to be estimated to be exposed to 5 rem/yr.

Susan Kaplan asked whether the radiation health studies of workers are starting to show health effects with time simply because the latency periods for the effects are only beginning to expire. Paul Charp did not refute the possibility but pointed out that evidence supporting older radiation dose data are not as clear and may confound the effort to discern a health effect response with dose.

### **Public Comment**

Kowetha Davidson at this time began the scheduled public comment period.

The first public comment came from Wesley Howard, a member of the PACE Union. He asked whether kidney damage from working in the plants in Oak Ridge has been addressed. Paul Charp responded that potential effects on the kidney will be addressed in the health assessment because at lower levels the primary health effect of uranium is kidney chemical toxicity.

The next public comment was from Mike Knapp, who asked whether there would be a mechanism for individuals to enter into the community concerns data base contaminant levels that have been measured inside their body. Paul Charp suggested that those measurements would be very relevant and that data entry could be made in an existing text box entry field. Don Creasia pointed out that such data could be put on the Subcommittee concerns form. La Freta Dalton pointed out that the confidentiality of those data would have to be protected and could not be included on the written Subcommittee concern forms submitted.

Mike Knapp also asked, in connection with the dose reconstruction, has there been adequate offsite testing for environmental contaminants to be able to verify dose estimates or is additional sampling needed? Kowetha Davidson noted that the Subcommittee has already sent a recommendation to ATSDR regarding the issue of offsite soil sampling for the Oak Ridge area in general. Jack Hanley clarified that where ATSDR identifies data gaps they notify the EPA and/or DOE to collect additional data to fill those data needs for the ATSDR.

The next public comment was from John Steward, who expressed support for the recommendation of the Agenda Work Group to invite Dr. Markowitz of Queens College, NY to make a presentation to the Subcommittee. John Steward stated that he recently met with Dr. Markowitz in Nashville.

There were no additional comments from the public.

**Continued Discussion:  
Public Health Assessment Work Group Session**

The Subcommittee proceeded with the next agenda item, which was a presentation to the Subcommittee of the ATSDR chemical screening process for the period 1990 to the present. The presentation was made by Karl Markiewicz.

ATSDR Chemical Screening Process Presentation

The Screening Process for Contaminants of Concern for 1990 to the Present (Karl Markiewicz)

The presentation began with a display of the flow process diagram for the ATSDR screening process for Contaminants of concern (COC). The ATSDR process decision process addresses the following sequence of questions:

- Has the chemical has been detected in the environment? Chemicals that are not detected are not a COC. If detected,
- Are the detected levels of the chemical greater than ATSDR media-specific comparison values? Chemicals detected at levels below ATSDR media-specific comparison values are not a COC. If greater than comparison values,
- Are the detected levels of the chemical (if an inorganic chemical) greater than background levels? Inorganic chemicals detected at levels below background are not a COC. If greater than background values,
- Are there complete or potential exposure pathways? Chemicals in environmental media for which there is not an exposure pathway to humans are not COCs for the past or for the current time period but may be COCs for the future, depending on site-specific circumstances. If there is an exposure pathway,
- Are estimates of exposure doses greater than Health Guideline Values? Chemicals for which the estimated exposure doses are below Health Guideline Values are not COCs. If greater than Health Guideline Values,
- Refine exposure dose estimates with more site-specific data, demographics, water consumption patterns, other parameter values to determine whether the chemical is a COC. If determined a COC then the chemical has passed through the screening process and begins the public health implications phase of the health assessment process.

The ATSDR media-specific comparison values used are very conservative because they are based on conservative assumptions about parameters such as whether the exposure pathway is complete, the potential duration of human exposure, and bio-availability. ATSDR performs site-specific surveys of behavior patterns and consumption rates to refine exposure dose estimates.

Chemicals determined to be COCs during the screening process begin the public health implications phase of the health assessment process. In this next phase of public health assessment, the ATSDR examines more thoroughly the toxicology of the COCs. Studies of

toxicology in humans, if available, are examined for applicability. Human data are used in some cases.

Barbara Sonnenburg asked whether ATSDR will use bioassay data. Measurements of chemicals in the body have been made for some people, would these data be used in the health assessment process? Karl Markiewicz responded that the COC screening process itself does not include the use of those data, but the health assessment process will use those data as a reality check for the screening process.

Barbara Sonnenburg then asked whether the ATSDR will consider multiple sources of contaminants, she referred to emissions from area power plants such as the Kingston, Tennessee power plant. Karl Markiewicz responded that potential competing sources of measured levels of contaminants in environmental media are not considered in the health assessment in general. However, air releases will be assessed by mathematical modeling of only the potential releases from the Oak Ridge site.

Barbara Sonnenburg also asked whether people could possibly have chemicals still in their bodies when the chemicals have disappeared from environmental media. The point made was that if people are not tested for chemical contamination inside them then perhaps contaminants could be missed if they have already disappeared from environmental media. Karl Markiewicz discussed biological half-lives of chemicals, rates of removal from the body, and storage in bones and fatty tissues of some contaminants. Various chemicals have various rates of removal from the body. Inorganic chemicals have a tendency to remain in the body a long time, chemicals such as benzene are purged from the body relatively quickly.

Susan Kaplan asked whether ATSDR is examining, in addition to COCs, any degradation products or reaction products of chemicals. Karl Markiewicz responded that known breakdown products in the body are taken into consideration. In environmental media, the analyses of samples are often for groups of chemicals. ATSDR then assumes the most toxic chemical form from that that group. Jack Hanley added that environmental samples are typically analyzed for standard lists of analytes established by EPA for superfund and RCRA sites. Kowetha Davidson added that analyses of environmental samples reflect what is present at the time the sample was collected and won't represent all of what may have been present previously.

L. C. Manley asked what might be a source of boron in the environment and what organ does boron affect. Karl Markiewicz explained that boron does occur naturally and that it was also used as the reservation as a neutron absorber. It is also commonly found in other consumer products. Boron health effect studies will be discussed later in the presentation.

Charles Washington asked whether what the correct excretion rate of mercury from the body is and pointed out that mercury in the body tends to remain.

James Lewis asked whether Karl Markiewicz has come across a situation of exposure of a community to a COC that is present at levels that exceed a threshold for safety without evidence of the expected health effects in the community. How is the assumption of a

member of the community that their health effect is caused by the contaminant handled? Wouldn't that be a conflicting situation and how would it be managed? Karl Markiewicz responded that such a situation would be difficult and would depend on the chemical. For example, asbestosis is only caused by asbestos. If it was known that asbestos was never used in Oak Ridge and a person came forward with asbestosis then ATSDR would have to investigate other potential sources of the individual's exposure to asbestos because they clearly have been exposed to it. ATSDR would consider other chemicals that can cause the same health effects, but they can not necessarily attribute an effect in an individual to particular exposure from a particular source.

Karl Markiewicz continued the presentation by discussing in detail the concept of ATSDR media-specific comparison values used in the COC screening process, expanding on how they are calculated and how they can be adjusted to account for different exposure assumptions.

A typical comparison value is an EMEG (Environmental Media Evaluation Guide) developed for the screening process. Derivation of an EMEG:

$$\text{EMEG} = (\text{MRL} \times \text{BW})/\text{IR}$$

where, BW = body weight in kg,  
MRL = minimal risk level in mg/kg/day,  
IR = ingestion rate in mg/day

Example ATSDR EMEG in soil for a child for boron is 20 ppm (parts per million). The MRL is 0.01 mg/kg/day. With a child body weight of 10 kg and a child ingestion rate of 0.005 kg/day (5000 mg/day).

The MRL in this example EMEG is based on reduced fetal body weights observed in an experimental study of rats ingesting boron. An important consideration in the public health assessment process is the relevance of such animal health effect studies to potential effects in humans, and the uncertainties associated with the use of these studies. If you change the ingestion rate (IR) to 100 mg/day and body weight (BW) to a 70 kg adult body weight the EMEG changes from 20 ppm to 7000 ppm.

The ATSDR MRL in this example for boron is based on the lowest observed adverse effect level (LOAEL). ATSDR divides by an uncertainty factor of 10 because this is a LOAEL not a NOAEL (no adverse effect level), divides by another uncertainty factor of 10 because the data are from an animal study rather than human data, and divides by a third factor of 10 to account for potential sensitive human subpopulations:

$$\text{MRL} = \text{LOAEL}/(10 \times 10 \times 10)$$

where, MRL = minimal risk level in mg/kg/day (0.0136),  
LOAEL = 13.6 mg/kg/day



Bob Eklund asked whether all ATSDR EMEG values are so conservative. Karl Markiewicz responded that all ATSDR EMEG values incorporate these conservation uncertainty factors.

Elmer Akin commented that the EMEG values are conservative if the toxicity endpoint being used is the most conservative endpoint. The EMEG value is conservative relative to the health effect endpoint it addresses.

Karl Markiewicz then presented the boron EMEG that would pertain to adult females by adjusting the body weight from 70 kg to 60 kg, resulting in an EMEG of 6000 ppm rather than 7000 ppm.

The consideration of acute versus chronic exposure was addressed next. A LOAEL for acute exposure of a child was presented, 184 mg/kg/day from a study of actual accidental ingestion of boron by children. Assuming 10 kg child body weight and child ingestion rate of 5000 mg/day results in an acute child EMEG for boron ingested in soil of 368,000 ppm (36.8% boron in soil). This is an example of the type of screening analysis that would be used to address exposure concerns.

Karl Markiewicz next presented an example “thermometer” graph of boron health effect versus estimated exposure dose for a site. The relative positioning of LOAELs, NOAELs, average daily intake, and EPA reference dose (RfD), were noted. On the same graph the ATSDR MRL is located three to four factors of ten below the LOAELs for animals, illustrating the high degree of conservatism incorporated into the ATSDR media-specific comparison values used in the screening process.

This concluded the presentation about the overall screening process.

Don Creasia suggested that the consideration of differences between effects in females versus males should involve more than adjusting the body weight parameter. Karl Markiewicz concurred and stated that ATSDR does look at such differences more carefully than just by adjusting the body weight parameter.

Examination of site-specific soil sample map of boron data:

Karl Markiewicz and Mark Evans presented and discussed an example data mapping program that is used by ATSDR. This presentation represents an example ATSDR data file of sample data for comparison of the analytical results in environmental media to ATSDR media-specific comparison values (EMEGs) in the screening process. The example data map presented depicted:

- 570,956 data points from soil sample analyses.
- Each sampling station for which boron was analyzed was presented on the map.
- Background sampling stations and site sampling stations were distinguished.
- 1306 site samples were reported analyzed for boron.
- 113 background soil samples were reported analyzed for boron.
- 480 site sample analytical results for boron were above the 20 ppm screening EMEG.

- 13 of the background sample analytical results for boron were above the 20 ppm screening EMEG.
- The detection limit for boron was reported as ranging from 4 ppm to 13 ppm.

Bob Eklund asked for clarification about the color indications depicted and whether the sampling stations depicted represented all of the sampling stations or only those yielding analytical detections. Karl Markiewicz responded that the map depicted all of the sampling stations.

*Kowetha Davidson at this time began the scheduled public comment period. Following the public comment period the presentation of Karl Markiewicz continued.*

### **Public Comment**

The first public comment came from John Steward who pointed out the need to carefully examine sources of chemicals at the Oak Ridge site. He stated that three workers at K-25 had chronic beryllium disease and DOE maintained that there was no beryllium at K-25, which was later determined not to be the case as 15 buildings were found to have beryllium in them. Carefully checking the sources of chemicals is very important.

The next public comment came from Mike Knapp who commented on the subject of offsite sampling that additional offsite sampling has been requested by members of the public. Mike Knapp asked what offsite data ATSDR is using and does ATSDR think the offsite sampling is adequate or should additional sampling offsite be performed? Karl Markiewicz responded that ATSDR sometimes identifies data gaps during their data review process and when this arises the ATSDR asks the responsible agencies to collect the data to fill the data gaps. An example of such a data gap ATSDR identified for the Paducah site was mentioned in which the soil data available was biased toward only the discharge points from surface waterways. This constituted a data gap that ATSDR recommended be filled by additional sampling. In the case of the Oak Ridge site the ATSDR staff may examine the pattern of gamma radiation levels from over flight surveys to look for indications of potential environmental trends or pathways to investigate. If there appears to be a need for additional sample collection to determine whether a trend is in fact present that could be recommended to support the health assessment process. At this point in the process it is too early for ATSDR to say whether they may identify data gaps.

Mike Knapp asked for a definition of a “data gap”. Karl Markiewicz referred to the data map display to illustrate a hypothetical lack of sample analytical data on the map offsite that would cause ATSDR to recommend collection of additional data.

Mike Knapp also asked whether sampling is being performed in the Roane County Gallahar Valley area where the TOSCA incinerator is located and if so are those data being incorporated. Tim Joseph responded that the TOSCA incinerator is monitored offsite and that the stack is monitored continuously in real time.

Mike Knapp commented that it would seem helpful to the health assessment process to have an epidemiological study to augment the sampling approach and determination whether there are data gaps. Karl Markiewicz responded that chemicals determined not to be COCs during the COC screening process would not warrant an epidemiological study. ATSDR uses the conservative screening level approach.

Mike Knapp asked how would the ATSDR health assessment address a hypothetical situation in which individuals in the community expressed concerns about excess cases of an effect, for example kidney problems, what would be the response to such information? Karl Markiewicz responded that those concerns would be included in the community concerns section of the health assessment report and potentially addressed as a separate consultation with people. It would be useful in the health assessment process being conducted for Oak Ridge to have interaction with the local medical community to work directly on such community concerns. This has been a useful aspect of the health assessment process conducted at other sites.

Mike Knapp asked whether potential contaminant movement through the subsurface vadose zone is included as a part of the health assessment and how is that included. Karl Markiewicz responded that ATSDR will include vadose zone groundwater modeling of potential movement of contaminants and identified Mark Evans as the individual who will be involved in that modeling.

Susan Kaplan commented to Mike Knapp that the TOSCA stack is not continually monitored, but is continuously sampled, and the data from that effort are not analyzed on a regular basis. Tim Joseph clarified that the continuous monitoring of the TOSCA incinerator does not include every parameter because there are not real time capable monitoring devices for every parameter, instrumentation does not exist to monitor all parameters real-time. Some parameters require chemical processing of a sample in a laboratory to produce a result, which does not lend itself to real time monitoring. For those parameters for which there is not real time monitoring capability samples are continually collected and are sent offsite for analysis. The parameters for which there is real time monitoring include CO<sub>2</sub>, NO<sub>x</sub>, O<sub>2</sub>, steam, and temperature.

Susan Kaplan also asked that ATSDR bring back to the Subcommittee additional data maps that show what data exist at this point. Karl Markiewicz commented that there are too many data points to present all data to the Subcommittee on data maps. He proposed that it would be more manageable for ATSDR to proceed through their COC screening process and come back to the Subcommittee with the data at that point in the process. It was also suggested that summary statistics on the data be presented rather than maps of all available data.

James Lewis commented on two issue topics:

- Issues are raised by communities, such as the Scarborough community, then sampling programs are conducted to address those issues, but these efforts do not seem to ever result in an answer to the community about what was found, even though similar questions are being asked each time. As the health assessment process is conducted it is

important to be concerned about that trend, the concerns of the public need to be addressed and the findings need to be communicated back to them.

- Regarding declassification issues, James Lewis asked Tim Joseph whether over time certain things were held as classified that later were held to be not classified?

Cheryl Smith responded to the concern about the availability of the results of the sampling program in the Scarboro Community. The entire data package has not been received but the radiological data have been received. The results have not been publicly submitted to the residents of the Scarboro Community. EPA will return to the community and provide the residents the opportunity to ask questions. The radiological data have been reviewed. There were a limited number of samples collected, there were 10 sampling locations. The EPA review of these data indicates that the uranium levels are within background levels.

Charles Washington asked that the location of the Scarboro Community and the locations of the DOE facilities be pointed out on the ATSDR data map displayed before the Subcommittee. The three DOE sites were located on the map in relation to local roads, mountain ridges, and the background locations. Charles Washington stated that other potential sources are located in the vicinity and that in the past release stacks didn't have filters in use today; therefore, background locations may not be strictly natural or un-impacted. There was discussion of the topic of ranges in background values.

Barbara Sonnenburg asked Karl Markiewicz if he has answers to three or four questions/suggestions raised in a previous work group meeting presentation that he made. One question concerned additional sampling if data gaps are identified during the health assessment. He believes that the follow up action was completed.

Bob Eklund commented that the boron map appears to show a bias in the data map display for the boron sampling offsite. Karl Markiewicz responded that this appears because not all samples are analyzed for all analytes. The pattern didn't emerge by design.

Elmer Akin made a comment about communicating answers to community concerns that are raised, pointing out that when a question or concern is raised about the community and the Subcommittee delays response there may not be another opportunity to communicate with the individual about their concern. Perhaps a Subcommittee policy that directs that such issues be addressed at the time is needed. An example is the question raised by James Lewis about the delay in communicating the sample results to the Scarboro Community. Kowetha Davidson recommended that that type of policy would be too disruptive to the Subcommittee meeting process.

### **Work Group Recommendation Sessions**

Kowetha Davidson began the work group recommendations portion of the Subcommittee agenda by introducing the presentation of the Agenda Work Group.

**AGENDA WORK GROUP RECOMMENDATIONS**

**Presentation by Barbara Sonnenburg**

Barbara Sonnenburg moved that the Subcommittee recommend to ATSDR that presentations by principal investigators from three DOE worker medical and exposure surveillance programs be scheduled:

- The investigation of former construction workers by the University of Cincinnati,
- The investigation of former gaseous diffusion plant workers by Queens College, NY,
- The surveillance of beryllium workers by Oak Ridge Associated Universities.

Barbara Sonnenburg noted for the Subcommittee that the Agenda Work Group understands that these presentations will not have a direct application to the ATSDR public health assessment; however, these presentations will provide the Subcommittee valuable information about the closest residents to these sites (workers). The work group wants to find out from these presentations the results of those studies, how they were developed, and how they were funded. The motion was seconded.

Discussion:

Jeff Hill commented that he thinks the presentations will benefit the Subcommittee since the principal medical investigators making the presentations will discuss their medical findings.

Don Creasia commented that the presenters should be asked to make sure they present their medical findings rather than just give an overview of what the program involved. The Subcommittee needs to ask the presenters in advance what they can and plan to present.

Bob Craig expressed support for the principal investigator presentations, but clarified that the presenters should only have their travel expenses covered. Kowetha Davidson responded that the specifics of how arrangements were made for the presentations would be the responsibility of ATSDR. Barbara Sonnenburg confirmed that the cost issue did not have to be a part of the Agenda Work Group motion.

A vote count was taken: 13 = in favor, 0 = opposed. The motion carried.

Barbara Sonnenburg announced that the next meeting of Agenda Work Group is Thursday February 21, 2002 at 4:30 PM and asked that all work group chairs submit to her by that time the agenda items that they need included in the agenda for the next Subcommittee meeting. The agenda will include, as a minimum, a work group session presentation by each work group and a work group recommendations presentation by each work group. Any additional agenda time needed by a work group should be submitted as a request to the Agenda Work Group.

**GUIDELINES AND PROCEDURES WORK GROUP PRESENTATION**

**Presentation by Kowetha Davidson**

Kowetha Davidson recommended from the Guidelines and Procedures Work Group that the Guidelines and Procedures Work Group look into how the work groups are functioning,

whether they are dysfunctional, and how they may be remedied if found dysfunctional. The work group may work with Jan Connery on this topic. No motion was made from the Guidelines and Procedures Work Group.

Discussion:

James Lewis asked whether the Guidelines and Procedures Work Group can look at the function of the Subcommittee as well as the work groups. Kowetha Davidson responded that the issue of examination of the functioning of the Subcommittee was addressed at an earlier meeting and the Subcommittee decided not to follow through at that time.

With no objections from the Subcommittee, the task was assigned to the Guidelines and Procedures Work Group.

**COMMUNICATIONS AND OUTREACH WORK GROUP PRESENTATION**

**Presentation by James Lewis**

James Lewis moved that the Subcommittee accept the content of the “concerns form” and the “fact sheet” found in Tab 14 of the Subcommittee members’ materials. The motion was seconded.

Discussion:

Kowetha Davidson asked for clarification whether these two documents could be used now or not. James Lewis clarified the motion to include that these two documents would be put into use now, with the stipulation that the Subcommittee consider modifying the “concerns form” to put the written entry of the person’s name on the same side of the form as the written concern expressed.

Susan Kaplan suggested that the Subcommittee may need more time for review of these two documents to provide input.

Jeff Hill made the comment that the name of the individual could be added to the back of the form as well as the front to help with keep the name associated with the written comment.

Donna Mosby commented that the Subcommittee needs to finalize these two documents and put them into use. The issue seems to be limited to format, which can be changed later if needed. The content is good and only format is in question.

Bob Eklund concurred with Donna Mosby that the content is good.

A vote count was taken: 13 = in favor, 0 = opposed. The motion carried.

**HEALTH EDUCATION NEEDS ASSESSMENT WORK GROUP PRESENTATION**

**Presentation by Donna Mosby**

There are no recommendations at this time from the Health Education Needs Assessment Work Group.

**MISSION STATEMENT WORK GROUP PRESENTATION**  
**Presentation by Karen Galloway**

Karen Galloway moved that the Subcommittee adopt the goals and objectives portion of the Mission Statement developed by the Ad Hoc Mission Statement Work Group. The motion was seconded.

Discussion:

No discussion.

A vote count was taken: 13 = in favor, 0 = opposed. The motion carried.

**PUBLIC HEALTH ASSESSMENT WORK GROUP PRESENTATION**  
**Presentation by James Lewis**

James Lewis moved that the Subcommittee adopt the recommendation submitted by the Public Health Assessment Work Group on the ATSDR screening process for determining the contaminants of concern for exposure from 1944 to 1990. The motion was seconded.

Discussion:

David Johnson recognized the hard work of the ad hoc committee and asked for the Subcommittee to express their thanks to James Lewis and the ad hoc committee with a round of appreciation.

Kowetha Davidson also expressed the thanks of the Subcommittee.

A vote count was taken: 13 in favor, 0 = opposed. The motion carried.

James Lewis moved that the Subcommittee adopt the recommendation submitted by the Public Health Assessment Work Group on the ATSDR screening process for determining the contaminants of concern for current exposure from 1991 to 2001. The motion was seconded.

Discussion:

No discussion.

A vote count was taken: 13 in favor, 0 = opposed. The motion carried.

**Unfinished Business/New Business/Issues/Concerns**

**Discussion Topic: Clinic in Oak Ridge**

Kowetha Davidson began a discussion on the issue of starting an ad hoc work group on the topic of a clinic in Oak Ridge. Kowetha Davidson recommended to the Subcommittee that the task be assigned to the Health Education Needs Assessment Work Group because this topic is not unrelated to the work that the work group is doing and the Subcommittee has numerous work groups already. It would be best to put the task in a work group that already exists rather than create an additional work group, it is not easy to schedule members to attend the work groups that exist at this point.

Barbara Sonnenburg disagrees with assigning the task to the existing work group. There may be members of the Subcommittee who are very interested in this task so there is a need for a distinct work group of people who are in this task, which will require quite an amount of work. Barbara Sonnenburg noted that the Subcommittee has yet to receive a response from Dr. Jackson after two requests to him for answers to questions raised to him during his presentation to the Subcommittee.

Kowetha Davidson acknowledged that the Subcommittee does not yet have from Dr. Jackson the requested criteria for establishing a community clinic and also pointed out that persons interested in this task are free to join the Health Education Needs Assessment Work Group to work on the topic. At this time, assigning the task to the existing work group will allow work to begin on the task without expanding the number of Subcommittee work groups. Until the criteria are received from Dr. Jackson there is not much work to do on the task at this time.

Donna Mosby commented that it seems premature to form an ad hoc work group on this topic at this time since the Subcommittee needs more detailed information. The task should be assigned to move forward with obtaining the criteria information from Dr. Jackson.

Charles Washington agreed with Barbara Sonnenburg's position because participation by people in the local communities could be solicited to work on this particular issue along with Subcommittee members. Alternatively, persons interested in this task could join the existing Health Education Needs Assessment Work Group to participate (only on this task) and perhaps later a subgroup could be formed from that work group as needed.

Kowetha Davidson asked the Subcommittee if there were any objections to assigning the task to the Health Education Needs Assessment Work Group.

Bob Eklund commented agreeing with Barbara Sonnenburg and Charles Washington because it is an issue that has arisen often to warrant its own work group. Acknowledging that there is not at this time enough information to work with Bob Eklund advocated that the Subcommittee consider forming a work group for this particular issue.

Kowetha Davidson repeated her recommendation not to form an additional work group and stressed that the issue would receive appropriate attention within the structure of the existing work group, which is already established. No one would be precluded from working on the issue with it assigned to the Health Education Needs Assessment Work Group.



Susan Kaplan disagreed with the statement that there is not yet enough information for a group to begin working with on this issue. Susan Kaplan reported that she has been collecting information and has a videotape concerning a clinic in Hanford, Washington that needs to be reviewed. There is a model established for a clinic that is not operated by the site contractor. In addition, at this time there is a need to examine the proposed state legislation on this issue discussed at the previous Subcommittee meeting. Also someone needs to pursue the information requested from Dr. Jackson.

Kowetha Davidson asked again that the task be assigned to the existing work group and pointed out that the Subcommittee has a point of contact, through ATSDR, to pursue information from Dr. Jackson, and that is Bill Carter. The Subcommittee will not contact Dr. Jackson directly per protocol.

Donna Mosby commented again that the Health Education Needs Assessment Work Group can begin work on the effort.

James Lewis suggested that a detailed written account of the discussions and decisions made during Dr. Jackson's presentation to the Subcommittee be prepared so that the Subcommittee will have a basis for moving forward on the issue of a clinic.

Kowetha Davidson at this time assigned the issue of a clinic to the Health Education Needs Assessment Work Group until there is additional information available to allow the Subcommittee to determine how to proceed on the issue.

**Announcement: Public Health Assessment Work Group Chairperson**

Kowetha Davidson announced that Bob Craig has agreed to become the chairperson of the Public Health Assessment Work Group. Kowetha Davidson agreed to provide assistance to Bob Craig as needed.

**Other items of business:**

- In light of the assignment of the issue of a clinic to the Health Education Needs Assessment Work Group Barbara Sonnenburg asked Donna Mosby to specifically identify agenda items related to that issue so that people who would like to attend the next meeting can plan their time accordingly. Donna Mosby responded that at this time there is no other business for the work group other than the clinic issue.
- Kowetha Davidson asked that each work group meet at least briefly within two weeks after each Subcommittee meeting to plan their strategy for their work that they have to accomplish between Subcommittee meetings. This approach is intended to expedite work. James Lewis mentioned that the Subcommittee previously discussed having a chairpersons meeting following each Subcommittee meeting to identify from the Subcommittee meeting what each work group is to be working on. James Lewis suggested that the Guidelines and Procedures Work Group develop a procedure for the Subcommittee to assist with this. Kowetha Davidson noted that a conference call has been scheduled for this Friday (February 15, 2002 at 10:30 AM) to address these issues

with the work group chairpersons. La Freta Dalton will distribute to the chairpersons the conference call telephone number prior to the call.

- Karen Galloway asked whether a motion is needed to dissolve the ad hoc mission statement committee and asked whether an additional person has been recruited for the Guidelines and Procedures Work Group. Kowetha Davidson stated that no motion to dissolve the ad hoc mission statement committee was needed. Kowetha Davidson noted that the Guidelines and Procedures Work Group currently includes Karen Galloway, David Johnson, L. C. Manley, and Donna Mosby. Kowetha Davidson asked the following persons whether they would join the work group, Jeff Hill (declined), Don Creasia (can volunteer but cautioned that he travels frequently which complicates his ability to attend meetings), and Jerry Kuhaida (not in the room at the time).
- Regarding vacancies on the Subcommittee, La Freta Dalton announced that ATSDR will meet this week to select new Subcommittee members. ATSDR has received 26 to 27 new applications. ATSDR has identified one of the openings for a worker (ATSDR has applications from workers) and ATSDR also notes the Subcommittee's preference to include a self-identified ill resident. ATSDR will also try to replace the expertise that was lost in 2001 through resignations. ATSDR has a total of five positions on the Subcommittee to fill.

**Discussion Topic: Motion to Request Data Maps from ATSDR**

Susan Kaplan moved that ATSDR produce color sampling maps and summary information showing the existing status of sampling that has been done that yielded the ATSDR contaminants of concern. Since the Subcommittee continues to study the issue of sampling the Subcommittee needs to see what sampling has been done. Susan Kaplan stated that the maps presented by Karl Markiewicz during the meeting were very informative and the Subcommittee can not move forward with recommendations on sampling without having this kind of information. The motion was seconded.

Karl Markiewicz pointed out that the ATSDR has not yet determined the contaminants of concern and suggested that the maps and summaries address samples collected rather than what has been selected as a COC, which will come later in the process. ATSDR can provide sampling summaries as an overview at this point; however, data maps for contaminants analyzed for would at this point amount to nearly 400 maps.

Kowetha Davidson suggested that the Public Health Assessment Work Group look into this with ATSDR to decide what to ask for so the Subcommittee does not get too many maps. Susan Kaplan clarified that the ATSDR could produce the maps for a short list of historical contaminants of concern.

Jack Hanley asked that the ATSDR be allowed to proceed through the chemical screening process with the work group and with the Subcommittee in a stepped manner to identify the contaminants that need to be looked at in greater detail and ultimately determine those contaminants that warrant additional sampling. At this point in the process there are too

many contaminants detected. To produce data maps for them prior to the screening process will generate an overwhelming amount of information.

Charles Washington commented that ATSDR could provide data at this point on contaminants that are of concern to the Subcommittee members.

Kowetha Davidson suggested that the Subcommittee allow ATSDR to carry their screening process further along and then look at the sampling efforts performed for the contaminants that emerge from the screening.

Jerry Pereira expressed the concern that data maps produced at this point would be out of context out in the public view, data maps before the community should have associated context, dialog, presentation to present them in a meaningful manner. Perhaps this step is premature at this point.

James Lewis asked whether the rumor that Karl Markiewicz will be leaving this ATSDR project is true. Karl Markiewicz confirmed that he is relocating to Texas. Karl Markiewicz emphasized that his replacement will do an excellent job. The Subcommittee expressed thanks to Karl Markiewicz for all of the hard work he has contributed.

Bob Eklund commented that it should be reasonable to identify the five or eight contaminants that are most likely to be an issue, in the proper context, to get an idea of what sampling has been accomplished for these contaminants. The issue of sampling has been re-occurring in the Public Health Assessment Work Group often enough to warrant producing an overview of sampling information at this point.

Kowetha Davidson cautioned that the issue of contaminants of concern could be confused if the contaminants picked for presentation at this point are not the same as those yielded by the ATSDR screening process. Kowetha Davidson reminded the Subcommittee that the ATSDR screening process has already been adopted by the Subcommittee.

David Johnson commented that the sampling data maps would merely be a visual aid for the Subcommittee to be able to identify and track certain chemicals, and would not be in conflict with the screening process but would facilitate/complement the screening process.

Barbara Sonnenburg expressed support for producing a limited number of data maps, perhaps up to ten contaminants. Barbara Sonnenburg asked Susan Kaplan whether she could name about ten contaminants to request or whether she would suggest asking one of the work groups to recommend to the Subcommittee which contaminants to request.

Bob Craig moved that the motion by Susan Kaplan be tabled and that the issue be assigned to the Public Health Assessment Work Group to bring a recommendation to ATSDR on behalf of the Subcommittee. With concurrence from the Subcommittee, Kowetha Davidson stated that Susan Kaplan's motion is tabled and the task of determining whether sampling maps should be produced at this time, and for which contaminants, was assigned to the Public Health Assessment Work Group.

### **Identification of Action Items**

Kowetha Davidson read the list of action items from the meeting.

Action: Tim Joseph will provide a copy of the ORHASP data process/data compilation (18 compact disks) to ATSDR to be available for viewing in the ATSDR field office.

Action: Paul Charp will review health effect studies of nuclear shipyard workers to see at what levels of worker radiation exposure researchers may have found association with health effects in the workers.

Action: Paul Charp will discuss within the ATSDR office the appropriateness of presenting in the radiation screening process an MRL that is less than the average annual background radiation exposure of an individual in the United States.

Action: La Freta Dalton will pursue extracting the portion of the videotape of today's meeting that captures the presentation by Tim Joseph concerning the ORHASP data process so that it can be made available for viewing by the public.

### **Housekeeping Issues and Closing Comments**

La Freta Dalton announced that the ATSDR field office in Oak Ridge will be closed at 7:30 PM on February 13, 2002 and will be reopened at 10:30 AM on February 20, 2002.

La Freta Dalton asked that Subcommittee members examine the web site, examine the links on the web site, and evaluate whether information needs to be added to the web site. The web site is a first draft. Most of the information and input provided so far has been incorporated into the web site.

Kowetha Davidson reminded Subcommittee members that Donna Mosby should be paid for any snacks that each may have consumed.

The meeting adjourned at 8:15 PM.