OAK RIDGE RESERVATION
HEALTH EFFECTS SUBCOMMITTEE

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

Detailed Proceedings of the March 26, 2002 meeting of the Subcommittee

Call to Order/ Opening Remarks/ Introductions

The Oak Ridge Reservation Health Effects Subcommittee (ORRHES) convened on March 26, 2002 at the YWCA at 1660 Oak Ridge Turnpike, Oak Ridge, Tennessee. Chairperson Kowetha Davidson called the meeting to order at 12:25 PM, welcoming all attendees.

La Freta Dalton also welcomed attendees and made the remark that the agenda includes a brief presentation by Jerry Pereira at 12:40 PM on issues that concern the Subcommittee regarding budget.

Kowetha Davidson asked for attendees to introduce themselves. The attendees at this time were:

Kowetha Davidson
La Freta Dalton
Brenda Vowell
Chudi Nwangwa
Elmer Akin
David Johnson
Bob Craig
Susan Kaplan
James Lewis
Don Creasia
LC Manley
Karen Galloway
Jeff Hill
Barbara Sonnenburg
Pete Malmquist
Jerry Kuhaida

Tom Moser
Cheryl Smith
TL Dishman
Jerry Pereira
Sandy Isaacs (sp)
Burt Cooper (sp)
Paul Charp
Rick _____ (President of PACE in Oak Ridge)
Jack Hanley
Bill Murray
Tim Joseph
Charles Washington arrived at approximately 6 PM
The recorder is Ken Ladrach

Agenda Review, Correspondence, and Announcements

Agenda Review

Kowetha Davidson briefly summarized the agenda for the meeting including:

- the presentations by the work groups,
- a public comment period,
- the presentation by Kathleen Taimi of DOE (at 2:00 PM rather than 1:45 PM),
- the presentation by Donna Cragle of ORISE,
- the presentation by Lyndon Rose of Queens College,
- a public comment period,
- the recommendations from the work groups,
- the unfinished/new business,
- identification of action items,
- house keeping issues.

There were no questions on the agenda, which was declared final with the change noted for the Kathleen Taimi presentation start time.

Correspondence

Kowetha Davidson remarked that the Subcommittee has received a response from Dr. Robert Jackson, of the Health Resources & Services Administration, who sent information regarding the establishment of clinics. This information has been placed in the ATSDR Oak Ridge field office.

Kowetha Davidson remarked that the Subcommittee has received a letter from Dr. Henry Falk of ATSDR in response to the Subcommittee's letter to Dr. Copeland regarding soil sampling.

Kowetha Davidson remarked that the Subcommittee has received a letter from Patrick Lipford of the Tennessee Department of Health regarding the documents that are contained in the Oak Ridge dose reconstruction study.

There were no questions regarding the correspondence.

Kowetha Davidson remarked that a letter from Mr. Dishman was received and distributed to the Subcommittee members just prior to the start of the meeting.

La Freta Dalton announced arrangements for the meal to be brought in during the evening break.

James Lewis commented that some of the correspondence received in the past has not been distributed to the appropriate work groups and asked whether the recent correspondence from Dr. Jackson has been forwarded to the appropriate work group.

Kowetha Davidson responded that the letter from Dr. Jackson has been brought to the attention of Donna Mosby, chair of the Health Education Needs Assessment Work Group.

Approval of February 11, 2002 ORRHES Meeting Minutes

Kowetha Davidson referred to the February 11, 2002 meeting minutes distributed previously to the Subcommittee members.

Bob Craig moved that the minutes be approved.
Jeff hill seconded the motion.

A vote was taken by voice with none opposed.
The minutes were declared approved.

Status of Action items – matrix provided

Kowetha Davidson referred to the matrix of recommendations and action items and asked Subcommittee members to review them and comment as needed. The status of pending and completed action items was reviewed. Kowetha Davidson noted completion of receipt of a response from Dr. Jackson, extraction of the video of Tim Joseph's presentation regarding the ORHASP data process, and submittal of the CD set of ORHASP data to the ATSDR office in Oak Ridge. The action to arrange for presentations regarding DOE worker surveillance programs will be completed during this Subcommittee meeting.

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

ATSDR Discussion – Jerry Pereira

ATSDR Budget
Jerry Pereira remarked that ATSDR held a meeting on March 25, 2002 with work group chairs and Kowetha Davidson. The meeting was held to make known the issue of changing ATSDR budgets and the impacts on the ATSDR activities at each DOE facility,

including Oak Ridge and the ORRHES. Budget changes have not been finalized at this time. At this time it is known that the DOE has cut ATSDR, NIOSH, and NCEH funding by $5.5 million. The allocations among these three agencies have not been established at this time. The allocation for each agency will not be known until perhaps early April 2002. Jerry Pereira commented that the overall big picture is that the budget reductions will significantly change budgets available to do ATSDR work in Oak Ridge. This information is presented today to make the Subcommittee aware of the issue and to avoid an unexpected announcement in the future that the Subcommittee cannot conduct its meetings and work groups. Jerry Pereira may know the specific budget impacts in a few weeks and will continue to keep Kowetha Davidson and the work group chairs informed. This issue is serious enough that it was appropriate to bring it before the Subcommittee.

Barbara Sonnenburg requested that when the ATSDR budget reductions for Oak Ridge are known, that Jerry Pereira bring to the Subcommittee the break down of the ATSDR budget and also a break down of the ATSDR expenditures last year so that a comparison can then be made.

Elmer Akin asked what the biggest costs are for ATSDR and whether ATSDR budget from DOE includes paying ATSDR staff. Jerry Pereira responded that the ATSDR budget for Oak Ridge includes salary for La Freta Dalton and one-half of the salary for Marilyn Palmer. No other ATSDR salary expenses are part of the Oak Ridge budget. The overall greatest costs of the ATSDR work in Oak Ridge are for Subcommittee member payment, transportation of Subcommittee members, and work group costs. This is all in a category called Object Class 11 and encompasses personnel, transportation costs, and costs of meetings.

Jerry Pereira emphasized that ATSDR would like to avoid continuing without a thought to expenditures and then have a sudden curtailment of Subcommittee work because the work in Oak Ridge has been very productive and ATSDR, including Dr. Falk, places a high priority on the work in Oak Ridge.

James Lewis commented that he attended the meeting on March 25th and appreciated the advance notification that ATSDR management was giving the Subcommittee. James Lewis emphasized the need for the Subcommittee to be proactive in getting recommendations out to ATSDR. James Lewis expressed a desire to present to the Subcommittee and ATSDR management during the meeting several recommendations concerning what the Subcommittee is trying to accomplish and what areas the Subcommittee would like ATSDR to focus on.

Kowetha Davidson asked whether the administrative assistant for the ATSDR Oak Ridge field office is "on hold" due to uncertainties in budget at this time. Jerry Pereira responded that the process of obtaining and administrative assistant is currently "on hold" but the process may be resumed again in the near future, depending on the outcome of budget reductions. Kowetha Davidson emphasized on behalf of the Subcommittee that they would like ATSDR to do whatever it can to obtain additional funding for Object Class 11.

James Lewis suggested that all of the agencies involved in Oak Ridge ought to come together to find the needed support for the public health assessment process and the ORRHES in Oak Ridge, and encouraged ATSDR to look to those agencies for support.

Bob Craig commented that it seems that the DOE is letting the community down by not providing continuing funding, making it difficult to maintain confidence in DOE.

Jeff Hill commented that he would not like to see the valuable members of the Subcommittee be lost from the effort because of funding issues. Jeff Hill suggested that the Subcommittee allow the work group chairs and ATSDR to address budget issues while the Subcommittee proceeds with the work it has at hand.

La Freta Dalton explained that ATSDR considered various options to address the funding issue with the Subcommittee and chose to first address it with the chairperson and the work group chairs. In the future the same approach will be taken, rather than involving the meeting time and resources of the entire Subcommittee. The work group chairs will be relied on to communicate with rest of the Subcommittee members.

Jerry Pereira emphasized that the Subcommittee will continue on despite the budget impacts that may arise. Some changes or adjustments in how the Subcommittee functions may be necessary but the process will continue.

Tim Joseph pointed out that DOE makes budget requests and that it is the U.S. Congress that approves requested budgets. DOE does not think the ATSDR work in Oak Ridge is less important.

Pete Malmquist commented that the Subcommittee members should express funding concerns to local congressional representatives by preparing individual letter to them, not just form letters.

Kowetha Davidson reiterated that once the final budget impacts are known the Subcommittee can then identify what actions are needed to try to ensure needed funding.

James Lewis encouraged the Subcommittee to be proactively looking at ways to improve their process and to avoid impacts from budget reductions. James Lewis again expressed a desire to present to the Subcommittee during the meeting several recommendations for actions that may help reduce the impacts of budget reductions on the work of the Subcommittee.

Work Group Sessions

AGENDA WORK GROUP PRESENTATION

Barbara Sonnenburg reported that the Agenda Work Group met twice and encouraged the work group chairs to communicate to the Agenda Work Group chair as soon as possible the topics and allotted time they request for the agenda of the next Subcommittee meeting. In addition, it was requested that agenda requests for meeting dates beyond the next Subcommittee meeting be submitted, if available. Thee work group chairs have not been communicating these requests, the information has been coming from Bill Murray of the ATSDR field office.

GUIDELINES AND PROCEDURES WORK GROUP

Karen Galloway reported that the Guidelines and Procedures Work Group met once and examined ways to improve the effectiveness of the operations of work group meetings. A recommendation is before the Subcommittee today from the work group. The recommendation attempts to remove distinctions between members of the public and Subcommittee members in work group meetings with respect to participation and voting in the work groups. The recommendation proposes changes in the bylaws (Article IX) regarding requirements for voting in work group meetings. The recommendation specifies attendance requirements in order to participate in votes to ensure familiarization with issues under consideration for vote.

Susan Kaplan expressed concern about the wording of the recommendation requiring attendance for the entire work group meeting when it may be that it is a topic of discussion to be voted on that is important for a requirement to attend.

Karen Galloway explained that the wording was chosen due to problems with people coming in and out of work group meetings resulting in additional time spent bringing individuals up to date on discussions at hand. Susan Kaplan suggested changing the wording of the recommendation to apply the attendance requirement to the discussion of topics to be voted on rather than the entire work group meeting.

James Lewis commented that previous work with Susan Kaplan on the Communications and Outreach Work Group resulted in development of draft written guidelines that helped address these work group participation issues. The draft guidelines were not issued but could be used by the Guidelines and Procedures Work Group in their task to improve work group function/operation.

Kowetha Davidson pointed out that the recommendation from the Guidelines and Procedures Work Group proposes changes to the bylaws themselves and that the bylaws includes a guideline document as an appendix that is incorporated by reference into the bylaws. This appendix could be an alternative place to provide guidance for work group operation.

Kowetha Davidson called for comments from the Subcommittee members about whether work group members should be required to attend work group meetings in their entirety.

David Johnson requested further work on the recommendation because at times a person is unable to attend an entire work group meeting.

Barbara Sonnenburg commented that at times it is not possible to attend the entire meeting of a work group, and suggested that members be required to attend most of a work group meeting. In addition, Barbara Sonnenburg brought up the subject of compensation for work group members, and asked whether Subcommittee members attending work group meetings are eligible for compensation for attendance even if they are not officially members of that work group.

Kowetha Davidson explained that at the December 2001 Subcommittee meeting the members of work groups were asked to sign up for their work groups again to clarify the official membership roster of each work group. The official work group members are eligible for compensation.

La Freta Dalton commented that earlier in 2001 there was difficulty clarifying which Subcommittee members were on each work group and in the summer of 2001 Kowetha Davidson asked the work group chairs to submit the roster of members on their work group. This was not completed until late in 2001 and in some cases Subcommittee members who were not official members of a work group were compensated for attendance at that work group. The specification is that a Subcommittee member must be an official member of a work group to be eligible for compensation for attending a meeting of that work group.

Jerry Pereira commented that he has a breakdown of the work groups and how many people were compensated for work group participation. Jerry Pereira suggested that the Subcommittee determine the official membership of each work group at this time and proceed from that list to provide compensation. Emphasis was placed in the comment on the expectation that compensated work group members assume real responsibility for accomplishing the tasks of the work group.

Regarding the wording of the proposed recommendation, Susan Kaplan commented that at times some individuals not regularly involved in a work group have tried to take over a work group meeting discussion and because of this potential it is important to put some requirements on the work group meetings. At the same time it is important not to word requirements that are too restrictive for regular contributing members of work groups.

Karen Galloway replied that the intent of the recommendation was not to adopt requirements that are excessively restrictive or that inhibit participation in the work groups by anyone but rather the intent was to even out the basis for participation by members of the Subcommittee and members of the public.

Bob Craig commented that it may be appropriate to make a motion to change the bylaws to identify officially each member of each work group and that only those official members are compensated and specify that official work group members must be actively involved in the work group. Kowetha Davidson asked that the Guidelines and Procedures work group take the issue and their recommendation back for additional review as an action item.

Addressing all of the Subcommittee members, James Lewis urged each member to make a commitment to get involved in the process and that the Subcommittee as a whole must give the time and effort necessary to address the issues to which the Subcommittee is committed.

David Johnson commented that the work group process should be people friendly and should not be made too rigid or it will discourage participation by individuals from the community. The process should be inclusive rather than exclusive.

Jeff Hill suggested that during the work group session presentations later in the meeting each work group chair present the roster of their work group members as a reminder to Subcommittee members of which work groups they are serving on.

The Guidelines and procedures Work Group will continue to work on the wording of their recommendation regarding participation in work groups.

COMMUNICATIONS AND OUTREACH WORK GROUP

James Lewis reported on examination of the web site and has provided comments about it to ATSDR. Getting the web site finished and available to the public online is a key issue to the Communications and Outreach work Group. James Lewis reported on examination of the PACE web site and the former workers web sites and compared them to the ORRHES web site. The other websites have good features that are user friendly. The ORRHES web site is similar but needs some adjustments to make it more user friendly and easier to explore to find information. The work group will meet and make comments to ATSDR soon. James Lewis urged all Subcommittee members to review the web site and provide comments to ATSDR.

La Freta Dalton emphasized the need to get comments on the web site back by the end of this week if possible.

Jeff Hill asked that an e-mail be sent to each Subcommittee member containing a link to the web site in it.

James Lewis suggested that the Subcommittee take the opportunity of this meeting to briefly access the web site during the meeting and review it as a group to save time.

HEALTH EDUCATION NEEDS ASSESSMENT WORK GROUP

James Lewis reported that the work group is focusing on the issue of the need for a clinic and clinical intervention in the community. The work group has compared the activities of PACE versus ORRHES on the topics of exposure assessment and phase I health evaluation. Pace has been helpful by providing information to the work group on their activities. James Lewis reported that PACE has good organization and worker outreach programs that the Subcommittee can learn from. Thanks to PACE for their help by giving an overview of their needs assessment activities.

PUBLIC HEALTH ASSESSMENT WORK GROUP

Bob Craig reported that the work group has met twice and meets regularly on the first and third Mondays of each month. As reported earlier by James Lewis, the work group has had an overview of the health assessment activities that PACE has conducted.

The work group dealt with the action from the February 11, 2002 Subcommittee meeting to address the issue of whether or not to request from ATSDR color maps of sampling locations. Bob Craig reported that the work group has obtained a series of color maps of all sampling sites in the Oak Ridge area by medium for sediment, soil, air, water, and groundwater. Most sample locations are close to the DOE Oak Ridge plants. These maps are available at the local ATSDR office for viewing. These maps are not separate by contaminant of concern at this point in time. Bob Craig suggested that the sampling location maps be reviewed to see where samples have been collected and then pursue obtaining maps for individual contaminants of concern.

James Lewis added that he has a presentation prepared about these maps and sampling issues and that he would like to share that presentation with the Subcommittee, time permitting.

Barbara Sonnenburg asked whether the sampling maps that are available could be put up on the wall during the Subcommittee meeting. Bob Craig responded that there are 8 or 10 color maps available at this time, including one example map of soil sample locations in the handouts before the Subcommittee. Bob Craig suggested that Bill Murray help get the color maps from the ATSDR office in Oak Ridge and bring them to the Subcommittee meeting during a break.

Oak Ridge Environmental Information System (OREIS) data base

Elmer Akin asked whether the data on the sampling maps was obtained from the Oak Ridge Environmental Information System online. Bob Craig responded that the data are from that online database and that it is a requirement that any data collected be verified and included in that data base.

Elmer Akin noted that the February 11, 2002 Subcommittee meeting minutes didn't include the name of this online database and requested that the name of the database be documented in minutes of the Subcommittee meeting. The name of that online database is the Oak Ridge Environmental Information System (OREIS). The recorder was

directed to include the name of the database in the minutes of the Subcommittee meeting. The URL for the online database was not at hand during the meeting.

[Web site: **http://www-oreis.bechteljacobs.org/oreis/help/oreishome.html]**

Bob Craig noted that a password is required to gain access to the actual data in the data base and that Chudi Nwangwa provided access for the work group. Tim Joseph clarified that there are two levels of access to the OREIS, all members of the public can get their own password for access to view environmental data.

Elmer Akin suggested that the Subcommittee receive a progress report/update each meeting on the ATSDR community concerns database. La Freta Dalton responded that there is an action item from the December 3-4, 2001 Subcommittee meeting in the action matrix that lists the ongoing status of the ATSDR community concerns database. Bob Craig reported that he did not have any updated information on the ATSDR community concerns database. Jack Hanley added that ATSDR has been working on moving that database into beta development phase since the Paul Charp presentation in the February 11, 2002 Subcommittee. Soon ATSDR should be able to provide an update report to the Public Health Assessment Work Group.

Public Comment

Jean Shaakir-Ali, commented that she has been intimately involved in the OREIS database through her work at the ORNL Environmental Sciences Division from the late 1980s to the mid 1990s. Work included data verification, validation, and data management, including loading data into the ORACLE tables of the database. Jean Shaakir-Ali volunteered to assist the Subcommittee with this database if help is needed. Bob Craig confirmed with Jean Shaakir-Ali that the OREIS database contains data from prior to 1990, and thanked her for her offer of assistance.

Bill Murray announced to the Subcommittee that he has produced the work group signup sheets that were completed during the December 2001 Subcommittee meeting.

DOE Medical and Exposure Surveillance Program

Prior to the beginning of the presentation, Bob Craig announced that the color sampling location maps that he discussed during his Public Health Assessment Work Group presentation had been brought to the meeting from the Oak Ridge ATSDR office and were available for viewing on the wall of the meeting room.

Barbara Sonnenburg asked whether Eula Bingham will make a presentation as indicated on an earlier draft of the meeting agenda. Bill Murray responded that Dr. Eula Bingham had to cancel her presentation because a conflict had arisen. Bill Murray tried to arrange her presentation by telephone or a substitute presenter; however, neither of those alternatives was feasible. James Lewis suggested that perhaps another presentation opportunity could be offered to Dr. Bingham. Jeff Hill commented that the presentation of Dr. Lyndon Rose may cover most of what Dr. Bingham was going to present, since both programs are conceptually similar.

Kowetha Davidson announced the beginning of the afternoon guest presentations concerning the DOE studies of workers. These presentations are being held because of the interest of Subcommittee members in the health surveillance studies as they relate to Oak Ridge and the public health assessment process for the Oak Ridge site. These studies of worker health are not within the mandate of the ATSDR public health assessment; however, it is recognized that there are parallels between the worker studies and the public health assessment that warrant bringing these presenters to the Subcommittee.

The first presenter announced was Kathleen Taimi of DOE headquarters, presenting by telephone. Kathleen Taimi is the advisor and program manager for the former DOE worker program in the DOE Office of the Deputy Assistant Secretary of Health Studies. Kathleen Taimi previously worked with the EPA headquarters Superfund program, an EPA regional office where she worked to implement one of the first federal programs to respond to community concerns about contamination of drinking water from industrial wastes sites, and the Tennessee Department of Health, Vanderbilt Center of for Industrial Water Quality Management, and the State of Virginia Water Quality Board.

[recorder's note: At the request of ATSDR, issues/concerns/questions regarding the DOE medical surveillance program have been inserted (in *italics*) and the responsive portion of the proceedings has been highlighted (in **bold**).]

Presentation and Discussion:
DOE Medical and Exposure Surveillance Program for Former DOE Workers
By Kathleen Taimi of DOE-HQ (via conference call)

Kathleen Taimi asked that the layout of the room of the Subcommittee meeting be described for her. Kowetha Davidson briefly described the arrangement of the Subcommittee and explained that an overhead projector with her presentation transparencies was being employed for the benefit of attendees.

Kathleen Taimi expressed appreciation to the Subcommittee for the opportunity to present information about the former worker program and began the presentation with background information about the initiation and timeline of the program.

[*What events led to the development of the Former Worker Program legislation?*]

The DOE former worker program was initiated in response to the mandate of a 1992 piece of legislation (Section 3162 of Public law 102-484: Defense Authorization Act for FY 1993), which required establishment of a program for the identification and ongoing medical evaluation of workers formerly exposed to radioactive and hazardous substances during employment.

Specific Major Requirements of the Legislation:

1. Issue regulations that establish the process of the former worker program (Department of Health and Human Services must concur on the regulations),
2. Identify radioactive and hazardous substances,
3. Identify workers exposed to levels that present significant health risks,
4. Determine the number, scope, and frequency of medical tests to evaluate the extent, nature, and medical consequences of exposure,
5. Provide test results in readily understandable form by medical personnel,
6. Ensure the privacy of individual's medical information,
7. Ensure that individual participation is voluntary,
8. Consult with the Department of Health and Human Services, the American College of Occupational & Environmental Medicine, the National Council on Radiation Protection and Measurements, and labor organizations,
9. The Department of Health and Human Services was to work with the Centers for Disease Control and Prevention, the National Institute for Occupational Safety and Health, and the Department of Labor to establish risk levels for the exposures to workers,
10. The Department of Energy was to collect the information on the tests and examinations of workers.

Timeline of the Program:

When the legislation passed in 1993 there was no funding included in the DOE budget to implement the program, until FY 1998. Prior to 1998, the former worker surveillance program was planned and initiated using funds that DOE took from other DOE programs.

DOE worked with the other agencies and organizations specified in the legislation as well as individual health and safety experts to determine how to implement the former worker surveillance program. The DOE Office of Health Studies was not certain that a program of this type could be implemented because the historical information at DOE sites needed to implement the program, covering workers from as far back as the 1940s, would be difficult to find and sift through and would be fragmented or missing.

DOE did not issue regulations to establish the process of operation of the former worker program because it was not known how to implement the program when it started. DOE decided not to prepare regulations until there was adequate experience trying to implement the program to see if it was feasible.

DOE met with other involved/interested organizations (labor unions, industry safety and health professionals, government officials, and workers) to try to determine how to implement the former worker program. These other groups had expressed interest in working with DOE to develop the program. An initial series of four meetings with interested organizations was convened in the spring of 1994, to examine aspects of how to:

1. organize the program administratively,
2. what medical screening tests to employ,
3. how to implement screening tests,
4. what kind of follow up program to employ, and
5. how to notify/find former workers to solicit voluntary participation.

These meetings resulted in the development of a white paper within DOE on how to conduct the program. The white paper was distributed to the meeting participants for comment. Comments were collected and in the fall of 1994 DOE developed their proposed approach to implementing the program and requests for application.

[*Does this program include contractors and subcontractors?*]

DOE decided to implement the program externally, to enhance credibility and because DOE did not have the expertise internally to do the work. DOE developed a solicitation for the Federal Register for applications to develop former worker surveillance projects at DOE sites. The solicitation in 1995 received 22 applications for projects to implement the program.

Funding was sought from the DOE Office of Environmental Management and the Office of Defense Programs because the program had not yet been funded by congress.

The applicants were allowed to choose their worker cohorts, and were required to justify why a program should be implemented for those workers, because there was not adequate funding to be able to address all workers at DOE sites at that point in the program's implementation. The 22 applications were reviewed by a panel to evaluate the merit of each application. The review board members were individuals from outside DOE and comprised experts including occupational physicians, risk communications experts, and industrial hygienists. The panel used a scoring process to quantify the technical merits of the 22 applicants. The applications were then ranked by merit score and the top six ranked applicant projects were selected in the summer of 1996 to be funded as pilot projects:

- Hanford construction workers project,
- Hanford production workers project,
- Nevada Test Site tunnel workers project,
- Rocky Flats workers project,
- Oak Ridge construction workers project,
- Gaseous diffusion plant workers project.

[*Describe the purpose and process of Phase I of the project?*]

Phase I of the program (Needs Assessment):
Each of the six pilot projects was performing the same scope of work. The projects differed in the worker cohort they addressed. The scope of work required each project to perform the same Phase I tasks and Phase II tasks. This approach allowed DOE to determine which projects/techniques accomplished the tasks well when implemented.

Needs Assessment tasks performed by each of the projects included:

1. **identify existing information at the site on former workers, their exposures, and health outcomes of workers,**
2. **use identified information to develop techniques for contacting former workers,**
3. **determine the most significant worker exposure hazards, problems, and concerns,**
4. **identify approaches to working in partnership with local unions, site management, site contractors, the local community, and state and local health officials,**
5. **attend semi-annual meetings of DOE and all the project principal investigators,**
6. **complete the tasks and prepare a Phase I Needs Assessment Report in 10 to 12 months. The report had to document any needs found and document whether a Phase II (medical screening phase) was warranted. The report had to identify workers that were at significant risk and would warrant medical screening, identify the health outcome that the medical screening phase should look for, identify the exposures of concern that might lead to the identified health outcomes.**

The projects had some difficulties finding the information they needed at these sites and putting it into an understandable form since an effort of this type had not been performed before for these sites (collecting all health-related information available).

[*What were the recommendations of the Phase I?*]

Each of the submitted Needs Assessment Reports was sent to a NIOSH peer review panel for review. The NIOSH made recommendations whether each project had adequately justified the need for Phase II based on their reviews of the Needs Assessment Reports. The NIOSH reviews occurred from September through spring (1996-1997). All six reports recommended Phase II and NIOSH provided DOE with comments and recommendations on the Phase I reports and on preliminary plans for Phase II. All six of these projects were funded by DOE to go into Phase II.

[*Describe the purpose and process of Phase II of the project?*]
[*What type of follow up does a former worker receive if an occupational illness or health condition is identified? Does the follow up make sure the patients have received proper treatment from their doctors? Do they re-test after a time period to see if the patients are improving?*]

Phase II of the program (Medical Screening):
The program focused on providing screening for workers, not diagnosis or treatment. The screening results were used to refer workers to other medical care providers (workers' personal physician or a specialist) for follow up care. The DOE projects also provided assistance to workers to pursue workers compensation benefit programs, insurance benefit programs, other applicable benefit programs. Once the workers had received screening the DOE did not want the workers to be left with no where to turn or not knowing where to turn for follow up action to address their health needs.

Each of the six pilot projects was performing the same scope of work during Phase II. The scope of work required each project to perform the same Phase II tasks.

The medical screening tasks performed by each of the projects included:
1. **identify and locate targeted former workers identified in the needs assessment as at significant risk,**
2. **determine the health concerns that were related to the workers' past DOE work,**
3. **communicate to the workers what their health risks might be and what steps they could take to prevent, minimize, or cope with their health risks,**
4. **provide medical screening to the targeted cohorts based on the exposure history and the acceptability of screening tests,**
5. **follow the medical screening test protocol developed for the former worker program so that the same screening tests were used for the same types of exposures in the different projects,**
6. **ensure that the implementation of the screening testing was on a voluntary basis**
7. **assist in coordination of referrals for follow up treatment, including workers compensation and other benefit programs. The former worker program was not funded to perform the level of testing beyond screening that would be needed for diagnoses or treatment (full medical evaluations not possible due to funding limitations).**
8. **ensure dialogue with local parties interested in the projects. Each project has a local advisory group that they meet with periodically to share information about the project and the general results of the screening.**
9. **evaluate the level of satisfaction with the project among workers. The projects are using questionnaires to collect project satisfaction data from the workers,**
10. **attend semi-annual meetings of DOE and all the project principal investigators.**

Specific methods for accomplishing the tasks may vary between projects although they must conform to the tasks and screening tests specified by DOE for the program.

Many of the workers that went through the screening program received negative screening results (screening did not indicate that a health concern or need for follow up testing. Each of the projects is currently engaged in Phase II work.

Discussion:
Kathleen Taimi stopped the presentation to allow the Subcommittee to direct the course of discussion. Kowetha Davidson thanked Kathleen Taimi for her presentation and called for questions from the Subcommittee.

Barbara Sonnenburg asked for:

- additional detail regarding what "follow up treatment" entails in the former worker projects. Does DOE actually know whether the workers find doctors that can treat them once they are diagnosed. Are they getting diagnoses? Are they getting the proper treatment?
- clarification about how the pilot projects described can be expanded to address all the workers? The program includes a pilot project addressing former DOE construction workers in Oak Ridge, but these are only a subset of former DOE workers in Oak Ridge.

[*What type of follow up does a former worker receive if an occupational illness or health condition is identified? Does the follow up make sure the patients have received proper treatment from their doctors? Do they re-test after a time period to see if the patients are improving?*]

Regarding the follow up diagnosis and treatment question Kathleen Taimi responded:

- **that the program was not designed to provide a worker with diagnosis. The program was designed to provide screening testing. DOE does not always know whether workers obtain appropriate follow up diagnosis or treatment. Some of the projects have developed and provided to workers lists of local specialists that may be able to help workers with follow up diagnostic action. The communities in the vicinities of the sites do not contain many occupational physicians. At the Nevada Test Site project the physicians in the project have worked with the University of Nevada to institute an occupational medicine program in the medical school so that medical students will learn about occupational medicine while in school and hopefully remain in the area to practice. These future doctors would have a better knowledge of occupational medicine, the NTS, the exposures local people may have had occupationally, and the kinds of health concerns potentially associated with persons in the local area.**

[*Why haven't they been expanded so far? What will it take to expand them?*]

Regarding the program expansion question Kathleen Taimi responded:

- **that there are DOE sites where there are no former worker projects and DOE sites where projects do not address all former workers, Oak Ridge is an example of this latter case. Each year, funding for the former worker program is requested. The former worker program budget has increased since 1998 to 11 million dollars. Currently, there are 12 projects being implemented and there is no funding now for additional projects. At this time Kathleen Taimi is determining the resource needs for expanding the former worker program too fill in gaps in coverage of former DOE workers. This information will be used in the process of trying to determine the future of the former worker program. At this time the future of the former worker program is unknown. There have been numerous inquiries from people in Oak Ridge about gaps in the former worker program, which they have not been able to address because the future of funding and direction of the program are unknown. People at other DOE sites are also making similar inquiries. The budget for the former worker program is expected to stay flat or decrease in the future. Some of the existing projects are going to phase down as worker participation decreases. This could free up funds for new projects but these kinds of decisions have not been made yet.**

Susan Kaplan referred to two bullet items in the overhead transparency presentation of program requirements. One requirement is for identification of workers exposed to levels that present significant health risks. The other requirement is for agencies to establish risk levels for exposures. Susan Kaplan asked whether these levels have been quantified, are they available, and whether there is a place where information is available to see a profile of who may have been impacted.

Kathleen Taimi's response was no. The CDC, NIOSH, and the Department of Labor felt that they were unable to accomplish those items. Part of the reason for this was that the information needed to accomplish those items was not available. The type of information available at the sites varies and it was not known how much of the information needed to complete those requirements could be found. The agencies were not willing to perform those tasks. There are not compilations of exposure related information available.

Jeff Hill asked whether any communities at DOE sites have attempted to model the DOE former worker program for the benefit of members of the community. Also, if the former worker program has been successful, how could funding be obtained for similar efforts in communities since it has been difficult to obtain funding for the worker program?

Kathleen Taimi responded that she does not know of any communities that have tried to establish such a program or clinic for screening in their community, modeled on the DOE former worker program. Kathleen Taimi was not aware of such an effort for the Oak Ridge community. Possibly some community associated with a project site is doing this. Kathleen Taimi offered to check with the projects to see whether there has been interest

in their local communities for modeling the worker screening program for their communities.

James Lewis commented that he has examined the PACE needs assessment for the Oak Ridge area and that it was impressive in its approach to exposure assessment. James Lewis commented that it is important to obtain copies of the needs assessment reports from the other former worker project efforts for use by the Subcommittee in Oak Ridge. In addition, Phase I of the DOE former worker program has similarity with the Phase I approach that ATSDR has for Oak Ridge. Some of the Phase II items of the DOE former worker program appear to be similar to what ATSDR may be doing in its public health assessment for Oak Ridge (identifying and locating former workers at significant risk, ascertaining health concerns related to past DOE work, and communicating health risk information to workers). However, the item of providing medical screening in the DOE former worker program is absent from the ATSDR public health assessment approach. James Lewis noted that it appears that the DOE and ATSDR programs are similar to a point but they diverge at the crucial point of providing medical screening to people. James Lewis asked whether the DOE projects directed workers to go to their physician based on Phase I findings but in the absence of Phase II medical screening. Kathleen Taimi clarified that referral to physicians for additional follow up was based on results of Phase II medical screening results. The choice of physician to seek follow up testing with was left to the individual worker.

James Lewis asked whether lists of qualified physicians and written guidelines for how to select physicians should be prepared for the public, so that information is available for them when health concerns and issues arise. The example of a document prepared by PACE as part of their Worker Health Protection Program entitled "How To Pick A Qualified Doctor" was given. In response Kathleen Taimi reported that the former worker projects, including in the Oak Ridge area, have identified the physicians that are in their local area that they can refer people to for follow up. Kathleen Taimi pointed out that ATSDR may not have the authority to provide medical screening as part of the public health assessment that they are tasked to perform. The legislation for the former worker program did specifically task DOE to include medical screening in the former worker program. Kathleen Taimi commented that the former worker bill that the legislature worked on did include a section that specified treatment and follow up beyond medical screening but that when the legislation was finalized and passed the Congress had removed those sections. The actions of the Congress sometimes delete specific requested tasks and the agencies must adhere to the items with which they are tasked in the legislation.

Kowetha Davidson called for a comment from the public.

John Steward asked whether Kathleen Taimi sees potential future funding from DOE for workers to obtain medical benefits, actual medical treatment following the screening effort. Kathleen Taimi responded that although the former worker program does not extend follow up testing, diagnosis, or treatment to workers the screening process provides value to workers because the screening results provide an indication whether

they are sick or not. John Steward pointed out that workers who are sick do not have a funding mechanism to turn to for treatment. Kathleen Taimi pointed out that the Department of Labor compensation program was recently established as a mechanism for compensation and that DOE (DOE Worker Advocacy Office) is required to assist workers not covered in that DOL compensation with the workers compensation process in their state.

Kowetha Davidson asked whether DOE will in the future request funding to establish, partially establish, or assist establishing clinics in the communities of DOE sites for occupational medicine. The clinics are something the communities are asking for. Kathleen Taimi responded that she does not have the answer to that question.

Chronic Beryllium Disease Surveillance Overview

Presentation and Discussion:
Chronic Beryllium Disease Surveillance Overview
Donna Cragle of Oak Ridge Institute for Science and Education

The second presenter announced was Dr. Donna Cragle of the Oak Ridge Institute for Science and Education (ORISE). Donna Cragle is the director of the Center for Epidemiologic Research at ORISE, whose mission is to conduct and support high quality epidemiologic research, with primary emphasis on occupational studies. Donna Cragle's presentation addressed the chronic beryllium disease surveillance program.

Beryllium introduction:
Donna Cragle began with an introduction to the element beryllium. Beryllium is a naturally occurring metallic element used in many products and processes. Beryllium is useful because it is light-weight, stiff, has good materials properties, so it is used a lot. Beryllium is used primarily as an alloying element to strengthen copper. Beryllium is used in cars, aircraft, nuclear reactors as moderator, mountain bikes, golf clubs, springs, electrical contacts, spot-welding on electrical contacts.

Beryllium exposure mechanisms:
People are usually exposed to beryllium in the form of a mist, dust, or fume. Any activity with beryllium that causes fine particles to be released into the air is an activity that allows you to become exposed to beryllium. Inhalation of the aerosolized beryllium particles is the primary exposure means. People exposed the most include people who machine beryllium, welders, chemical operators. It is also possible for persons to be exposed while performing other unrelated duties in the same room where beryllium machining is occurring.

Beryllium disease:

Beryllium disease is a delayed cell mediated immune system response to beryllium. Individuals breathe beryllium into their lungs. Certain individuals who inhale beryllium (not all individuals) have the genetic makeup that is susceptible to the beryllium disease. Beryllium disease is an immune response. The body increases production of lymphocytes, as an immune response, trying to isolate the beryllium particles. Damage results from the immune process in the lungs. Granulomas occur progressively in the lungs as the white blood cells try to seal off the beryllium particles in the lung, forming scar tissue. Eventually this makes it harder to breathe because the lungs can't expand and contract normally or exchange gases as well. The disease develops slowly, takes a long time to develop. The disease can be mild or can be severe, depending on the susceptibility of the person.

Beryllium disease occurs in 3 to 5 % of those exposed to high levels of beryllium. Beryllium disease is not curable but is treatable. Steroid medications are used to treat the disease. The symptoms of beryllium disease include shortness of breath, cough, chest pain, fatigue, weight loss, appetite loss. All or none of the symptoms may be present in a given person. Unfortunately, these are symptoms common to many diseases.

[*What type of medical screening is provided to former workers?*]

Screening:
How do you decide if you have beryllium disease? The main screening exam for beryllium disease is a specialized blood test called the beryllium lymphocyte proliferation test. The test involves taking a person's blood sample, isolating lymphocytes, growing some of these cells in the presence and some in the absence of beryllium and comparing how fast the white blood cells are growing in the two circumstances. If the cells in the presence of beryllium grow 3 to 5 times faster than the cells in the absence of beryllium the person is determined to be responsive to beryllium exposure. Duplicate positive tests are usually required before making a determination that a person is sensitive to beryllium because there are some difficulties with the test. The Department of Labor only requires one positive test to qualify for the DOL compensation program. The test is accompanied by a questionnaire to gather data on how the person might have been exposed to the Beryllium. It is possible for people with very low levels of exposure to develop beryllium disease. The questionnaire allows people to be placed into risk categories. Chest x-rays used to be performed on everyone that entered the program, but now they only offer the chest x-rays to persons who report symptoms of beryllium disease because the blood test is the more specific test for beryllium disease.

Diagnosis:
The blood test does not complete the diagnosis. Diagnosis is completed based on collection and testing of lymphocytes from the lungs and biopsy of granulomas from the lungs, both invasive procedures. Lymphocytes are collected by lavage with saline solution and tested as the blood cells are tested. Diagnosis is based on whether the lung cells test positive for accelerated growth in the presence of beryllium and whether the lungs show signs of granuloma damage. Qualification for the DOL/NIOSH

compensation program requires cell positive cell sensitivity test results and the presence of lung granulomas. Qualification for workers compensation programs vary from state to state, so the federal program helps level the differences in requirements between different states.

DOE surveillance program:
The DOE beryllium disease surveillance program began in 1991 as a pilot screening program at Rocky Flats, Colorado because an initial case was diagnosed at National Jewish Hospital in Denver in a worker in 1986. The screening began to reveal people who were sensitive to beryllium, and in 1993 DOE started the beryllium screening program in Oak Ridge at the Y-12 plant. The screening program found that people did have sensitivity to beryllium here. In 1998 DOE decided to expand the screening program to any DOE sites where workers had been exposed to beryllium. DOE arranged for ORISE to identify workers at DOE sites where beryllium had been used to look for former workers that might have been exposed.

[*How many former workers have received medical screening?*]

ORISE has screened 14,000 mostly former workers (as of November 2000) and found 154 cases of chronic beryllium disease (CBD) and 287 cases of beryllium sensitization.

ORISE was also tasked by DOE to retest workers because the disease takes time to develop and one test is not enough to be certain whether the disease arises. Multiple follow up tests are needed because the onset of CBD can occur after a long time post-exposure.

At Rocky Flats, 34% of those who tested positive did have beryllium disease upon clinical evaluation. At Y-12 in Oak Ridge, 55% of those who tested positive did have beryllium disease upon clinical evaluation. At the Rocky Flats program people who tested positive were strongly urged to get clinical evaluation. At Oak Ridge the program did not urge clinical evaluation as strongly. This difference in the two programs likely accounts for the different percentage of cases diagnosed at Rocky Flats versus Oak Ridge. In addition, the screening program began more recently at Oak Ridge so there are fewer data points, these statistics cover through November 2001. The Kansas City screening program is in an early stage of implementation, there are no cases identified at this time.

[*What type of follow up does a former worker receive if an occupational illness or health condition is identified? Does the follow up make sure the patients have received proper treatment from their doctors? Do they re-test after a time period to see if the patients are improving?*]

The importance of re-testing is demonstrated by the finding that at Rocky Flats 2.4% of current employees and 1.6% of former employees re-tested were found to

be sensitive to beryllium or actual beryllium disease cases while their first test results were normal. Three-year re-test cycles are necessary to capture the disease.

For Oak Ridge (Y-12) and for Rocky Flats, a job title break down of positive test results indicates that the highest incidence of beryllium disease occurs among persons actually working with the beryllium. But workers don't have to be actually working with the beryllium to be exposed and test positive for beryllium disease. Workers in the vicinity performing other tasks can be exposed. For example, the incidence among health physics technicians at Rocky Flats is similar to the incidence among beryllium machinists.

Elmer Akin asked about the genetic predisposition aspect of beryllium disease, stating that the data appear to show a dose response relationship rather than a genetic relationship, unless the genetic incidence in the general population is rather high. Donna Cragle responded that in the population the genetic predisposition is approximately 30%.

[*How many former workers have received medical screening?*]

Through January 2002 the beryllium surveillance programs have screened nearly 18,000 people at various sites. The prevalence of beryllium disease among Y-12 and Rocky Flats workers is similar (about 3.5%).

A member of the public (no name given) asked what category of workers were tested at the IAAP site in Burlington, Iowa. Donna Cragle responded that at that site the testing was available to any workers, there were no lists of workers to use to try to identify potentially exposed workers. The screening program was initiated there because there was great concern expressed there in public meetings about Beryllium. It was decided that people would sign up for the screening program at public meetings. This is the way workers were identified for screening at this site.

A member of the public (no name given) asked what workers are included in the prevalence statistic presented as "other." Donna Cragle responded that that category on the displayed chart included a few Oak Ridge National Laboratory workers and a few Oak Ridge K-25 workers but most of the K-25 workers are captured by the PACE program.

The DOE facilities that have been fairly recently added to the beryllium screening program include Kansas City, Pantex, IAAP Burlington, and LLNL (Lawrence Livermore National Laboratory).

<u>Learned from the beryllium screening</u>:

1. Chronic beryllium disease is more prevalent than expected. Each program initiated has revealed incidence of people sensitized to beryllium within a few months.
2. Cases of beryllium disease and sensitization are not restricted to job titles of persons who actually worked with beryllium, because of the genetic susceptibility aspect of the disease. Persons working other jobs can be exposed and can become sensitized.

3. Many workers are sensitized to beryllium, although not all may have the disease at the time of clinical evaluation. Therefore, it is important to follow up test individuals who test positive for beryllium sensitization to ensure that diagnosis is not missed in the future.
4. Re-testing finds cases of beryllium disease after an initial negative test result.
5. Most of the facilities where screening was implemented kept their beryllium exposure level below the permissible level (2 micrograms beryllium / m^3 air).
6. This permissible level that has been in effect has apparently not been a protective level.

Future plans:

1. Continue to provide screening for as many former workers as DOE funding will allow. In FY 2001 over 5000 former workers were screened. There are another 20,000 former workers to notify and get into the screening process.
2. Provide ongoing medical care, which now consists of assisting workers to get into the Department of Labor compensation program. The DOL program will pay for medical follow up for those with one positive beryllium test result (two positive test results are not required).
3. Beginning to study the optimal time period for re-testing to determine whether 3 years is the optimal re-test time frame. If the data indicate that a 4-year re-test cycle is appropriate they could then get more workers into the screening program.
4. Study the rate of progression from beryllium sensitivity to chronic beryllium disease and from the disease to disability.
5. Determine whether there are other groups of former workers that need to be screened.
6. The data that is being collected may be used in the future by other researchers to study the beryllium disease mechanism, the screening test, and the genetic susceptibility.

Donna Cragle closed with a display of key contact person information for:

- medical questions – Joe Furman, MD,
- program & scheduling questions – Bill Stange, PhD, and Stephanie Page,
- program toll free number – 1-866-812-6703
- DOL compensation program – 1-877-447-9756

Discussion:

Elmer Akin asked about the 30% rate of genetic predisposition of beryllium disease in the general population versus a statistic of beryllium disease in 3 to 5% of those exposed displayed during the presentation. Donna Cragle clarified that the 30% refers to sensitivity to beryllium versus the 3% refers to chronic beryllium disease diagnosed.

LC Manley asked whether and how the program tracks workers outside the nuclear industry. Donna Cragle responded that ORISE is only tasked with screening former DOE workers, which would be only within the nuclear industry. LC Manley expressed concern about the workers who make/provide beryllium, beryllium manufacturing facilities. Donna Cragle responded that those facilities have in place very good beryllium screening programs for their workers.

Jeff Hill asked whether the program has noted anyone in the Oak Ridge community reportedly having sensitivity to beryllium or chronic beryllium disease. Donna Cragle responded no, adding that perhaps that question has not been examined yet. Jeff Hill also asked whether local machine shops in the community outside the DOE Oak Ridge facilities have been examined to determine whether workers there may have machined beryllium and been exposed in the past. Donna Cragle responded that at this time the surveillance program's responsibility is to screen DOE workers (onsite workers), which would not capture potential exposure of offsite machine shop workers who.

Barbara Sonnenburg asked whether there is follow up on the quality of medical attention workers get, are there doctors in the Oak Ridge area that are specialists in the area of treatment for beryllium exposure. Donna Cragle responded that ORISE is contracted with a specialist at the Methodist Medical Center for all of the beryllium medical screening. The 44 persons in the local area diagnosed with beryllium disease (from Y-12) see a variety of area pulmonologists. Donna Cragle mentioned Dr. Sullivan at UT has treated beryllium disease, Dr. Burton at Methodist Medical Center has treated beryllium disease. A person in need of treatment must find a pulmonologist who is interested in learning about chronic beryllium disease. There are only a limited number of centers in the U.S. that are capable of diagnosing beryllium disease, there are only 5 laboratories in the U.S. that can perform the lymphocyte test.

Barbara Sonnenburg asked whether workers diagnosed with beryllium disease can receive names of doctors qualified to treat beryllium disease. Donna Cragle responded that the surveillance program sends participants a list of the centers/doctors capable of diagnosing beryllium disease.

James Lewis noted that since beryllium is used as an alloying agent in many products and processes there could be many of other shops/facilities where beryllium is used beyond the use of beryllium at DOE facilities. James Lewis asked whether there is a listing that the public could access that identifies products/materials that contain beryllium or processes that include beryllium, perhaps a web site. Donna Cragle did not know of a specific web site but thought that it is likely that information is available on the web. Donna Cragle commented that at a facility using beryllium would have information concerning beryllium in the form of MSDS (material safety data sheets) but cautioned that the information may not be passed along to all persons who may be using the finished product after it is manufactured.

Elmer Akin commented that EPA was recently contacted by an auto mechanic who asked EPA to look into his possible beryllium exposure situation.

Following up on an earlier question about exposures to the community, Susan Kaplan asked whether Donna Cragle was aware of any reports of beryllium contamination "taken home" on workers, or historical releases of beryllium from Y-12 or the toxic incinerator. Donna Cragle responded that she is not qualified to answer and does not know, but the beryllium "take home" issue is one that is raised in most communities around DOE sites.

Bill Murray stated that NIOSH did a study of the beryllium "take home" issue and found that at a plant in Alabama some workers had beryllium on car floor mats and in their homes. Bill Murray did not know whether the study was published, but doesn't think workers' family members were examined to determine whether there was incidence of beryllium disease.

Bob Craig asked whether there is a newer standard for exposure, since the standard of 2 micrograms/m^3 is apparently not protective. Donna Cragle responded that a level of 0.2 micrograms/m^3 is being considered as a new standard. Jack Hanley added that 0.2 micrograms/m^3 is a standard that DOE is implementing. Bill Murray reported the ACGIH (American Conference of Governmental Industrial Hygienists) permissible exposure level in 2001 was 2 micrograms/m^3 and there was a notice of intended change to 0.2 micrograms/m^3.

Following up on an earlier question about exposures to the community, Jeff Hill asked how likely it might be for a person in the community to have beryllium disease and die and it not ever be known the person had beryllium disease. Donna Cragle responded that it would be certainly possible for a person's physician not to suspect beryllium disease in a member of the community if the person had never worked with beryllium.

John Steward asked whether there are reports of sensitivity to natural beryllium. Donna Cragle responded that she does not know. John Steward also asked whether a person should bother getting the beryllium screening test since there is no cure for chronic beryllium disease. Donna Cragle commented that seeking testing is an individual decision. There is no cure at this time, but the test results would be useful because if the result indicates sensitivity to beryllium there are preventive steps a person can take to better maintain pulmonary general health. In addition, drugs for treating beryllium disease are being tested and studied on an ongoing basis. John Steward gave his personal thanks to Donna Cragle and the beryllium surveillance program office.

Susan Kaplan asked whether there are any protections to help a person hold their job if they test positive but are not actually diagnosed with beryllium disease. Donna Cragle responded that she does not know since the surveillance program deals with former workers.

Medical Surveillance of Former Workers at DOE Gaseous Diffusion Plants

Presentation and Discussion:
Medical Surveillance of Former Workers at DOE Gaseous Diffusion Plants
Lyndon Rose of Queens College, City University of New York

The third presenter announced was Dr. Lyndon Rose of Queens College, City University of New York discussing the surveillance of former workers at the DOE gaseous diffusion facilities. These facilities include the gaseous diffusion plants in Oak Ridge, Paducah, and Portsmouth. The centrifuge process for uranium enrichment is also involved in the screening but unique to the Oak Ridge K-25 plant.

Three full-time physicians and two part-time physicians work on the project. The timeline for the surveillance of former DOE gaseous diffusion plant workers began in 1997-1998 with Phase I.

[*What sources of information and data were used during Phase I to determine the site activities and occupations that may have resulted in worker exposures?*]

Phase I (Screening):
Lyndon Rose emphasized two aspects of the program:
1. **The use of focus groups,**
2. **The use of risk mapping,**

These techniques were implemented at the DOE sites to determine the types of exposure the workers experienced and what type of medical screening tests to employ for screening the workers.

Phase I also included review of other worker health studies, involvement of local health facilities to actually perform the screening tests on workers, and compilation of a roster of former workers through the local unions and contractors.

[*What information was used to develop the site maps (risk mapping)?*]

Risk mapping:
The workers provided the input information for the risk mapping. Workers were given maps of buildings of concern and through a group effort they pinpointed where they worked with various substances in various processes. The risk mapping served as the basis for determining where exposures occurred.

[*Were all types of health effects considered or were specific effects emphasized?*]
[*What types of concerns have been collected from former workers?*]
[*What type of medical screening is provided to former workers?*]
[*How did you determine what type of medical screening is needed for the former workers?*]

Target organs:
Identification of target organs led to selection of screening tests for diseases.

1. Lung - a major target organ of concern. **Diseases of concern to workers include chronic obstructive lung disease, dust diseases of the lung, lung cancer, chronic obstructive lung disease. Inhalation exposure to uranium, nickel, and a few**

other agents were of concern to workers but there was not quantitative information about what those exposures might have been. The routine screening test for effects in the lungs was the chest x-ray. Screening started in April 1999 with only the routine chest x-ray to address concerns of lung cancer. In 2000, funding was provided for screening by CAT scan, which is a superior test. The chest x-ray test can be used for diagnosis of effects from asbestos and silica inhalation, but not for beryllium. The chest x-ray can show some indication of chronic obstructive lung disease, but the spyrometry test was added to test the inhalation volume of the individual's lung and the rate at which they can inhale and exhale.

2. Bladder – **Workers were concerned about bladder cancer.** The routine screening test was a urine cytology test that involves examining the urine for the appearance of bladder cells. Two additional biochemical tests were also used to screen for bladder cancer.
3. Renal toxicity – **Workers were concerned about kidney toxicity.** A routine blood chemistry screening test was used for testing renal function in general but it was not substance specific. Testing for specific agents was not feasible. The screening test was intended to determine whether the individual had abnormal kidney function.
4. Liver – **Workers were concerned about toxicity of solvents in the liver.** The routine test used was a blood test for general liver function.
5. Central Nervous System – **Workers were concerned about effects on the nervous system.** There are blood and urine screening tests for exposure to mercury. However, the residence time of mercury in the body is relatively brief and the workers are former workers potentially exposed years ago. It was judged that the mercury screening test would not be feasible.
6. Hearing impacts – **Workers were concerned about elevated noise levels in the plants.** Screening for hearing loss was included in the form of a routine audiogram test, which test degree of hearing loss at a variety of frequencies.
7. Cardiovascular - **Workers were concerned about cardiovascular risk because of heat stress on the job among workers.** There is no screening test for evaluating a potential relationship between heat stress and cardiovascular effect.

Screening program process:

- The central screening office is at Queens College in New York City. The process begins there. Representatives from Queens College traveled to the local sites to publicize the program, circulate local press releases. The PACE union was involved in publicizing the program. The interested workers called in to the Queens College office. The PACE union has been very active in informing former workers of the program so there has been no difficulty obtaining participants. From April 1999 through February 2002 about 4700 persons have been screened at the three gaseous diffusion sites, approximately 2100 of those were from the K-25 site. Screening appointments were scheduled by the Queens College office at the local facility. The worker was sent an information package in advance including a medical history questionnaire and an occupational exposure questionnaire. The occupational exposure questionnaire is detailed, asking about where the individual worked, what agents the worker may have been exposed to.

- The actual worker screening tests were performed at local facilities in the vicinity of the plant sites. These local facilities were contracted to perform the tests. For the Oak Ridge workers three local facilities included one in Oak Ridge, one on Kingston Pike in Knoxville, and a third at a private doctor's office. The appointment lasts 1 to 2 hours and includes a physical exam, hearing test, blood samples for blood chemistry screening tests, specialized tests for beryllium and bladder cancer screening.

- Post-test results of blood samples are available in a few days to Queens College. The worker was contacted by telephone or overnight mail if test results indicated any urgent findings. Local radiologist report of evaluation of chest x-rays are typically available in a few days. The worker was contacted by telephone or overnight mail if test results indicated any urgent findings. Remaining test results and the questionnaire/medical history information is typically available within 2 to 3 weeks.

- The complete package of test results is typically available in 3 to 6 weeks. A letter is written to the worker detailing the findings of the tests.

[*What were the findings of the Phase I exposure assessment?*]

Screening Findings/results:

1. **Kidney disease – findings indicate a low incidence (1 to 2 %).**
2. **Liver disease – findings indicate a low incidence.**
3. **Bladder cancer – findings indicate that of the 400 screened with the 3 tests (urine cytology and two biochemical tests) no bladder cancer cases identified yet but follow up is in progress.**
4. **Beryllium – findings from screening 1900 workers indicate that about 7% have had one positive test and 2 to 3 % have had two positive tests. Nine (9) of the double positive tested workers are receiving clinical evaluation for chronic beryllium disease. Three of the 9 clinical evaluations have proven to be diagnosed cases of beryllium disease.**
5. **Hearing tests – findings from 3600 screening tests indicate 65% have hearing loss (all types of loss. The investigators believe that this incidence is likely occupational hearing loss.**
6. **Lung diseases -**
   Parenchymal disease - incidence is 3 to 4% (asbestosis),
   Pleural disease – incidence is 5 to 6% (asbestos related pleural disease),
   Chronic bronchitis – incidence is 19 to 20% (based on questionnaire data),
   Emphysema – incidence is 7.2%,
   Silicosis – incidence is 1.2 %

Overall the incidence of lung diseases is high, the incidence of hearing loss is high, some beryllium disease has been diagnosed (results could change based on continuing follow up).

Dr. Rose stopped for questions.

Susan Kaplan asked whether someone could possibly develop, or has anyone developed, a simple checklist or fact sheet for people to follow for getting preliminarily health screen testing. Lyndon Rose responded that he did not know whether such material has been prepared for community screening, but in New York State a system of surveillance has been implemented for occupational disease at 8 centers in the state. This surveillance is available to members of the public who think they have exposure concerns in their living environment. Susan Kaplan followed up with the comment that some of the screening tests are simple and inexpensive and if people knew what screening to have they could eliminate worry of unknown health status.

Bob Craig asked what the expected incidences in the general population are for the diseases presented. Lyndon Rose responded that incidence rates in the general population are not presented partly because such incidence rates have not been compiled for some of the tests. There are compiled incidence rates for asbestos-related diseases, beryllium disease, and hearing loss in the general population, but there are not compilations of incidence rates in the population for things such as elevated liver enzyme test results and some of the other tests.

Barbara Sonnenburg asked whether the screening program found any lung cancers. Lyndon Rose responded that the screening included looking for lung cancers and found lung cancers. The data from the CAT scan screening program are still being compiled and evaluated (1700 screenings). Less than 10 cases of cancer have been found but they are still tracking the incidence of lung nodules (re-testing) in a group of 50 to 60 persons screened that could eventually become cancerous. Lyndon Rose confirmed that findings of suspicious lung nodules are reported to workers for their benefit.

Kowetha Davidson asked whether the CAT scan can detect other effects in the lungs besides nodules, such as asbestos-related effects. Lyndon Rose responded that asbestosis will show up better in a CAT scan than in chest x-rays. They report to the worker screened anything of health concern that may appear in the scan results.

James Lewis commented that the type/level of screening performed is based on the risk mapping process the program employed and asked whether the investigators can correlate the risk mapping results with the level of screening for an individual because not every individual screened receives all of the screening tests. Lyndon Rose responded that all worker participants were administered the full medical screening because they consistently responded that they had been exposed to all of the targeted concerns. The one exception was the bladder cancer screening test because the risk mapping was very predictive for that test. The group exposed to the bladder cancer risk factors was a well defined group, everyone else received the complete screening.

Tom Moser (PACE) commented about the risk mapping that PACE first targeted workers who needed the screening tests the most, people exposed daily to agents.

Kowetha Davidson thanked all of the presenters for the opportunity to learn about their programs and ATSDR for bringing in the speakers.

Public Comment

(During the discussion that followed the presentation by Lyndon Rose).
Regarding the screening for hearing loss, Bill Murray commented that there are chemicals that interact with noise to induce/intensify hearing loss and asked Lyndon Rose whether their screening program examined possible chemical exposures to the workers that may contribute to hearing loss. Lyndon Rose responded that the screening program did not try to identify causation by specific agents.

Meal Break

Meal break from 5:00 to 5:45 PM.

Work Group Recommendations

Prior to beginning the work group recommendation presentations, Kowetha Davidson introduced a report from Cheryl Smith. Cheryl Smith of EPA briefly reported on the status of the September 2001 offsite soil sampling in the Scarboro community in Oak Ridge. Cheryl Smith stated that EPA plans to present to the Scarboro community the data from the soil sampling during a meeting near the end of April 2002. Prior to the meeting, the data will be mailed to the members of the Scarboro community and to various stakeholders. Cheryl Smith promised Kowetha Davidson that when EPA sends out the data to the members of the Scarboro community, the Subcommittee and other stakeholders will be provided a copy of those data. Additional stakeholders include the Tennessee Department of Health, the Tennessee Department of Environment and Conservation, and DOE.

James Lewis commented that in a meeting he attended last Wednesday night a grant proposal was in preparation by Jeff Hill and others and included in its purpose obtaining assistance to help interpret the EPA data from the Scarboro community sampling project.

AGENDA WORK GROUP

Barbara Sonnenburg stated that the Agenda Work Group has no recommendation. The work groups chairs were reminded that they should get their agenda item requests to the Agenda Work Group as rapidly as possible.

GUIDELINES AND PROCEDURES WORK GROUP

Karen Galloway reported that the Guidelines and Procedures Work Group has no recommendation. The Guidelines and Procedures Work Group will refine/revise the draft recommendation that was discussed earlier by the Subcommittee. Members of the Subcommittee were encouraged to participate in the next meeting of the Guidelines and Procedures Work Group to assist in this effort.

COMMUNICATIONS AND OUTREACH WORK GROUP

James Lewis reported that the Communications and Outreach Work Group has no recommendation. James Lewis pointed out that the flow diagram for the DOE former worker surveillance program presented during the meeting is online and works very well and consideration should be given to it by Subcommittee members.

HEALTH EDUCATION NEEDS ASSESSMENT WORK GROUP

James Lewis reported that the Health Education Needs Assessment Work Group has no recommendation. Kowetha Davidson added that George Washington University is sending their proposal for the focus groups back to the IRB for approval.

PUBLIC HEALTH ASSESSMENT WORK GROUP

Bob Craig reported that the Public Health Assessment Work Group has two recommendations.

Recommendation 1:
The Public Health Assessment Work Group recommends to the Oak Ridge Reservation Health Effects Subcommittee that the letter to Dr. Henry Falk, Assistant Administrator, Agency for Toxic Substances and Disease Registry, regarding the need for public availability of the references and interviews for the Oak Ridge Dose Reconstruction, not be sent in light of what we have learned about the availability of these references from Dr. Timothy Joseph at the February 11, 2002 Subcommittee meeting.

Bob Craig moved that the recommendation be approved. The motion was seconded. A vote count was taken: 11 = in favor, 0 = opposed. The motion carried.

Recommendation 2:
The Public Health Assessment Work Group recommends to the Oak Ridge Reservation Health Effects Subcommittee that they urge the Agency for Toxic Substances and Disease Registry to expedite the generation of maps (in color) showing where all soil,

water, and air sampling was done for each contaminant of concern as soon as possible because of the importance of this information to the credibility of the public health assessment.

Discussion:
Bob Craig explained that color maps have been provided recently for sampling locations in each medium sampled, but not individually by contaminant of concern.

Susan Kaplan commented that the Subcommittee needs the maps by at least some individual contaminants of concern and expressed concern that the Subcommittee may run out of time to address potential additional sampling concerns by waiting until the ATSDR process determines the list of contaminants of concern.

Kowetha Davidson encouraged the Subcommittee to provide a technical rationale about what the individual contaminant of concern maps would provide to the public health assessment process. Bob Craig suggested that this recommendation could be taken back to the Public Health Assessment Work Group for rewording.

James Lewis commented that it is the timing of the availability of the data that is important. James Lewis stated that he has information to present to the Subcommittee that shows what can happen when data are presented out of context, time permitting during the meeting.

Barbara Sonnenburg asked whether it would be too late for the Subcommittee to ask for additional sampling at the point in the process at which ATSDR presents its list of contaminants of concern and contaminant-specific sample maps. Bob Craig commented that the time for the Subcommittee to recommend additional sampling will be once ATSDR has performed the public health assessment and identified any data gaps.

Jack Hanley commented that the contaminant-specific sampling location maps will be coming, and the most appropriate time to request additional sampling will be when those data are presented. Jack Hanley explained that when a data gap is identified ATSDR will notify DOE and DOE will be responsible for filling in the data gap.

Kowetha Davidson again commented that the Subcommittee should have a technical rationale for requesting this level of detail in the maps at this time.

Elmer Akin commented that there are 3 issues being discussed regarding the map recommendation:

1. The technical basis for requesting the maps is that these maps would help the Subcommittee provide answers to questions and concerns brought to the Subcommittee by members of the community. There has been discussion of formation of another group to address offsite sampling issues. The requested maps

would assist such a group to provide answers to concerns brought to it by the community.

2. The concern about the timing of a recommendation for additional sampling is significant depending on when DOE would like to know that the Subcommittee is requesting additional sampling. It may be likely that DOE would rather know sooner than later because as time goes by it becomes more difficult to get additional sampling.
3. The use of the phrase contaminant of concern in the recommendation is difficult because it is a specifically defined programmatic term. Elmer Akin suggested changing the wording from contaminant of concern to another term because ATSDR has not performed their contaminant of concern selection yet.

Kowetha Davidson stated that the issue of the recommendation for sampling maps will go back to the public Health Assessment Work Group.

James Lewis urged that the Subcommittee should address issues, such as the contaminant maps request, as soon as practical while the membership is assembled rather than sending the issue back to a work group. This is especially important in light of discussions earlier in the meeting about ongoing budgets.

Unfinished Business/New Business/Issues/Concerns

Paul Charp had action items to follow up on the findings of nuclear shipyard worker studies and the appropriateness of using a radiation exposure MRL (100 mrem/yr) that is less than the average background radiation exposure. Paul Charp commented that he intends to report on those actions at the next Public Health Assessment Work Group meeting (April 1, 2002), and then follow up with a presentation to the Subcommittee.

Jeff Hill asked for a brief response from Paul Charp since Jeff Hill is not planning on attending the work group meeting. Paul Charp responded that he has reviewed the shipyard worker studies and has a prepared presentation but he would rather present it at the work group meeting first and then present it to the full Subcommittee afterward.

La Freta Dalton addressed the earlier request for access during the meeting to the web site. This isn't possible because there is no operable outside phone line available to the meeting today. La Freta Dalton reminded the Subcommittee members that they should submit all web site comments to ATSDR this week.

Bob Craig identified the fact that Bob Eklund is not present and has resigned from the Subcommittee. The Subcommittee has no physician on it. Bob Craig urged that the replacement be a physician to provide that perspective. Bob Craig mentioned the name of a retired local physician, Jean Caldwell, that would be a good candidate.

La Freta Dalton stated that the name recommended by Bob Craig will be considered in the future, but ATSDR has already selected the new members for the 5 previously vacant seats on the Subcommittee.

Kowetha Davidson urged that ATSDR open up a new position on the Subcommittee specifically to replace the physician member that has been lost.

Presentation by James Lewis

James Lewis requested time to present recommendations to the Subcommittee, which he prepared following the meeting with ATSDR last night concerning budget reductions. James Lewis proposed that the Subcommittee consider the following three recommendations.

Recommendation 1:

The ATSDR should develop a detailed Project Management plan by the next ORRHES meeting which:

a) shows all the tasks within the various divisions and branches of ATSDR,
b) outlines how those efforts will come together to support the Public Health Assessment,
c) designates who will be delegated to manage the effort and how the authority to manage will be provided across divisions,
d) shows the anticipated schedule and budget,
e) explains how ATSDR will manage around the yo-yo funding.

Recommendation 2:

The ATSDR should work with the ORRHES to:

a) develop a complete list of work groups, work group activities, other public health activities, (including meetings) that are considered essential to achieve the goals and mission of the ORRHES as outlined in the project plan (Recommendation 1),
b) prioritize all significant activities in a top down ranking according to the contribution and value to ATSDR in meeting the mission of the ORRHES,
c) relate available and anticipated funding according to the top down ranking,
d) identify shortfalls in funding and relate it to the top down ranking,
e) identify mission components that cannot be funded,
f) identify the impact on mission success.

Recommendation 3:

The ATSDR should organize, formally lobby, and fight to maintain appropriate level of funding and resources required to carry out the mission of the ORRHES. In that effort ATSDR should explain how and why the efforts in Oak Ridge rank paramount in the public health activities nationwide because the Oak Ridge Reservation is considered by many to be the most complex of DOE facilities. (This makes it not only important, but sets a model for future successes.) ATSDR

should outline how they intend to do this and keep the ORRHES apprized of such activities. Where advantageous, ATSDR should involve the ORRHES in that effort.

Bob Craig moved that the Subcommittee approve Recommendation 2. Bob Craig sees Recommendation 3 as the job of members of the Subcommittee and community members, and believes that Recommendation 1 is a good thought but does not need that level of formality.

The motion was seconded by Barbara Sonnenburg.

Discussion:
Pete Malmquist expressed agreement with Bob Craig regarding Recommendation 3, ATSDR can't really lobby, and Recommendation 2. It is the responsibility of members of the Subcommittee and to write to congressmen.

Susan Kaplan suggested that Recommendation 1 is needed before you can implement Recommendation 2. Susan Kaplan mentioned that the Subcommittee has previously seen an outline of a draft project management plan and asked what happened to that.

David Johnson expressed agreement with Susan Kaplan regarding Recommendations 1 and 2 and agreement with Pete Malmquist regarding Recommendation 3.

Charles Washington expressed agreement with the comments of David Johnson.

Kowetha Davidson asked for clarification on Recommendation 2(e) about the definition of Subcommittee mission components that can not be funded.

James Lewis responded that one of the goals in the Subcommittee mission statement is to interact with and communicate to the public. That mission goal is impacted if the Subcommittee's work group funding is impacted.

Jerry Pereira commented that Recommendation 1(c), (d), and (e) will be accomplished as part of implementing Recommendation 2. Regarding Recommendation 1(a), the branches of ATSDR included in the work in Oak Ridge are limited to the Division of Health Assessment and Consultation (DHAC) and the DHEP, which is implementing the Needs Assessment through contractors. Recommendation 2 is the critical item to accomplish and Recommendation 3 has been addressed. Jerry Pereira recommended that the Subcommittee work hard on items in Recommendation 2 to identify priorities.

Susan Kaplan commented that Recommendation 1 is planning that needs to be done but hasn't been done. Jerry Pereira responded that Recommendation 2(b) is the plan that satisfies Recommendation 1.

A vote count was taken on the motion to approve Recommendation 2: 11 = in favor, 0 = opposed, 1 = abstention. The motion carried.

Susan Kaplan moved that the Subcommittee approve Recommendation 1.

The motion was seconded.

Discussion:
A Subcommittee member called for the vote.
A vote count was taken on the motion to approve Recommendation 1: 9 = in favor, 2 = opposed. The motion carried.

The Subcommittee expressed their thanks to James Lewis.

Identification of Action Items

The agenda turned to the identification of action items. Kowetha Davidson read the list of action items from the meeting.

Action: Jerry Pereira will bring to the Subcommittee a break down of the ATSDR budget/expenditures for the Oak Ridge site last year and a break down of the new ATSDR budget for the Oak Ridge site when the impact of reductions in the current DOE budget are known.

Action: The Guidelines and Procedures Work Group will re-examine their recommendation to amend the bylaws concerning the operation of work groups toward improving the function of the work groups without being excessively burdensome on work group members. Included in this action will be the task of preparing the official roster of each work group and designation of the basis for compensation of work group members.

Action: La Freta Dalton will re-send an e-mail to Subcommittee members containing a link to the web site and the request that all Subcommittee members review the web site and provide any input on it to ATSDR within a week.

Action: Kathleen Taimi will query the ongoing projects of the DOE Medical and Exposure Surveillance Program to ask whether local communities appear to have modeled any community screening projects on the DOE Medical and Exposure Surveillance projects.

Action: Timothy Joseph will pursue within DOE information about the reductions in DOE budget that will impact the ASTDR effort at the Oak Ridge site.

Charles Washington commented that the Subcommittee could do a better job of getting the message out about what the Subcommittee is doing. For example the Subcommittee could be making presentations to the community, but has not done that. This might help bring community pressure on legislators to provide the continuing funding needed. Charles Washington expressed his willingness to do presentations to the community regarding the Subcommittee's efforts and the ATSDR public health assessment. This would provide something of considerable valuable to the community. The community has a right to know, and a need to know more about what the Subcommittee is doing.

Housekeeping Issues and Closing Comments

Kowetha Davidson reminded Subcommittee members that the next two Subcommittee meetings are scheduled for May 6, 2002, followed by June 18, 2002. At the May meeting the dates for subsequent meetings will be tentatively scheduled.

Elmer Akin asked Tim Joseph about reductions in DOE budgets. Elmer Akin asked whether the $5.5 million dollar cut is a specific line item in the DOE budget and what other items may be included in that cut. Tim Joseph responded that he does not know the answer, but took the action to find out the answer.

Kowetha Davidson asked when the next Public Health Assessment Work Group meeting is scheduled. Bob Craig responded that that next meeting is April 1, 2002.

James Lewis commented that Elmer Akin has responded to the Subcommittee's request for information comparing the ATSDR public health assessment process and the EPA health assessment process. A document was submitted and is in the Oak Ridge ATSDR office for review by the Subcommittee members. Bob Craig stated that the Public Health Assessment Work Group will review the document provided by Elmer Akin.

Jerry Pereira asked whether the roster of work group members will be addressed. Kowetha Davidson and La Freta Dalton responded that they have the roster of work group members from the December 2001 meeting when work group members were asked again to sign up for work groups.

Kowetha Davidson declared the meeting adjourned at 7:00 PM.