
DEPARTMENT OF HEALTH AND HUMAN SERVICES

and

CENTERS FOR DISEASE CONTROL AND PREVENTION

convene the

**SAVANNAH RIVER SITE
HEALTH EFFECTS SUBCOMMITTEE**

***Augusta, Georgia
June 6, 2002***

FINAL RECORD OF THE PROCEEDINGS

TABLE OF CONTENTS

	<u>Page</u>
Executive Summary	ii
Summary of the Meeting	iv
Final Minutes of the Meeting	1
Opening Session	2
Review of Meeting Minutes	2
Review of Current Action Items	2
Overview of the SRSHER Workgroups	3
Occupational Illness Compensation Program	4
Discussion	6
Overview of Scenarios for the Radionuclide Screening Analysis	7
Discussion	9
Public Comment Period	10
Status Reports by the SRSHER Workgroups	10
Epidemiologic Data Workgroup	10
Agenda Workgroup	11
Outreach Workgroup	12
Community Summary Workgroup	12
Update on ATSDR's Educational Activities	12
Discussion	15
Public Comment Period	15
New SRSHER Business	16
Action Items	16
Agenda Items	16
Consensus Recommendations	17
Closing Session	17

EXECUTIVE SUMMARY

List of Acronyms

ATSDR	Agency for Toxic Substances and Disease Registry
CDC	Centers for Disease Control and Prevention
DOE	Department of Energy
HESs	Health Effects Subcommittees
NIOSH	National Institute for Occupational Safety and Health
SRSHEs	Savannah River Site Health Effects Subcommittee

During the opening session of the SRSHEs meeting on June 6, 2002, the January 10-11, 2002 meeting minutes were unanimously approved with the amendment as noted in the record; status reports were provided for all current action items.

The mission of each SRSHEs workgroup will be clearly defined in writing before structural changes are made. Workgroup assignments were noted for the record. The Epidemiologic Data Workgroup requested guidance from epidemiologists in collecting the most useful and effective information. The Agenda Workgroup will identify agenda items that were previously recommended. The former Outreach Workgroup chair will be contacted about the current status of the SRSHEs brochure. The Community Summary Workgroup will finalize the Phase II community summary and ask SRSHEs to vote on the document. The proposed draft charter for HESs will be distributed to SRSHEs after being cleared for release by the agencies.

The Occupational Illness Compensation Program was established by Congress to compensate employees, contractors and survivors of workers for illnesses resulting from work at DOE facilities. Claims are filed to either the federal or state component of the program. Eligible illnesses include cancer, chronic beryllium disease, silicosis and conditions caused by toxic substance exposure.

Under the federal program, NIOSH performs a dose reconstruction to determine cause and effect of cancer claims for any worker not involved with gaseous diffusion processes. Panels of independent physicians with expertise in occupational illnesses review medical and exposure records of state claimants. Employees and survivors receive compensation for covered medical costs and \$150,000 under the federal program. As of May 2, 2002, \$190.4 million has been paid.

Radionuclides released from SRS that were of highest significance to human health will be identified in the **Phase III SRS dose reconstruction study**. Data sources for the screening scenarios include the Phase II source terms for SRS releases and demographics of the exposed human population. The rural family, urban/suburban

family, migrant worker family, houseboat family, delivery person and outdoors person are being considered as screening scenarios in Phase III of the project.

For **ATSDR's educational activities**, ACPM will conduct a capacity-building program with environmental health education initiatives related to I-131. Materials will be designed and disseminated to target audiences at the SRS, Hanford and Oak Ridge sites. Input from HESs at the target sites will be sought over the course of the project. ATSDR's draft Case Studies in Environmental Medicine are currently being distributed to health-care professionals for pilot testing and evaluation.

The draft report on ATSDR's environmental health education needs assessment for the SRS area contains recommendations to SRSHER and agencies participating in the project. Data collected for the project will be used to develop tools and training for outreach activities and health education and promotion initiatives. Suggestions made by community leaders during focus groups related to dissemination of environmental health materials, communication, message delivery and collaboration with local groups.

During a discussion of **new SRSHER business**, action and agenda items raised during the meeting were reviewed; votes were properly taken for consensus recommendations. The Chair opened the floor for public comment at all times as designated on the agenda. The next SRSHER meeting is tentatively scheduled for September 12-13, 2002; September 5-6, 2002 was selected as the alternate date. Suggestions were made to hold the meeting in Hilton Head or Columbia, South Carolina or Atlanta or Savannah, Georgia.

CENTERS FOR DISEASE CONTROL AND PREVENTION SAVANNAH RIVER SITE HEALTH EFFECTS SUBCOMMITTEE

Summary of the Meeting

List of Acronyms

ACPM	American College of Preventive Medicine
ATSDR	Agency for Toxic Substances and Disease Registry
CDC	Centers for Disease Control and Prevention
DOE	Department of Energy
HESs	Health Effects Subcommittees
HHS	Department of Health and Human Services
NCEH	National Center for Environmental Health
NIOSH	National Institute for Occupational Safety and Health
OICP	Occupational Illness Compensation Program
SRSHES	Savannah River Site Health Effects Subcommittee

HHS and CDC convened an SRSHES meeting on June 6, 2002 at the Radisson Riverfront Conference Center in Augusta, Georgia. The January 10-11, 2002 meeting minutes were unanimously approved with the amendment as noted in the record. Current action items were completed by scheduling agenda items or disseminating information.

SRSHES agreed to clarify and clearly define the mission of each workgroup in writing before making structural changes. Agreement was reached that the collective SRSHES rather than individual workgroups would continue to serve as the official outreach mechanism to the public. Assignments for each workgroup were noted for the record. The Epidemiologic Data Workgroup is awaiting guidance from NCEH in identifying the most useful and effective information to collect for Phase III of the dose reconstruction project.

Technical assistance from NCEH epidemiologists is also needed to define the workgroup's future direction in terms of accessing available resources and existing data. The workgroup will only focus on data from SRS releases, but may expand to other sites in the future. SRSHES was interested in consulting with a non-CDC epidemiologist to assist the workgroup in collecting data. The Agenda Workgroup will identify agenda items that were previously recommended and report outstanding issues to SRSHES.

The former Outreach Workgroup chair will be contacted to obtain comments from former and current members on the SRSHES brochure. The Community Summary Workgroup will receive final comments on the Phase II community summary, call for a

vote, and then ask CDC to revise and distribute the document. The proposed draft charter for HESs has not yet been approved by the agencies; the current SRS/HES charter expires on July 7, 2002. The revised charter will be distributed to SRS/HES immediately after the draft is cleared for release to HESs.

OICP provides compensation to persons who become ill as a result of work at DOE facilities and certain of its vendors, contractors and subcontractors. The program was implemented in July 2001 and is divided into federal and state components. Under the federal program, employees and survivors can submit claims for cancer, chronic beryllium disease, beryllium sensitivity and silicosis. NIOSH performs a dose reconstruction to determine cause and effect of cancer claims for any worker not involved with gaseous diffusion processes.

Employees and survivors receive compensation for covered medical costs and a lump-sum payment of \$150,000. Ten resource centers have been established in areas with major DOE facilities to assist workers in filing claims. As of May 2, 2002, \$190.4 million has been paid. Under the state program, DOE assists contractors and survivors in filing claims for state workers' compensation benefits. Covered illnesses caused by exposure to a toxic substance in the course of employment at a DOE facility include heavy-metal poisoning, asbestosis, liver disease, nervous system disorders, non-cancerous respiratory problems, kidney disease and certain reproductive disorders.

Hearing loss, primary depression, carpal tunnel syndrome and lower back pain are not considered. HHS appoints panels of independent physicians with expertise in occupational illnesses to review medical and exposure records of claimants. SRS/HES noted that OICP criteria for doses are large compared to existing epidemiological studies of DOE workers. A recent newspaper article reported that most SRS claimants have not received compensation.

In Phase III of the SRS dose reconstruction study, radionuclides released from the site that were of highest significance relative to human health effects will be determined. A report by the International Atomic Energy Agency is being considered as the data source for default values. The basic screening model will calculate the activity released as well as factors for environmental dispersion, food transfer, human usage and dose. The study area for the SRS dose reconstruction project has been defined as 50 miles around the perimeter of the site.

The Phase II source terms and demographics on the exposed human population will be incorporated into the screening scenarios, such as age; location of residence, work, school and food sources; breathing rate; and percent of time spent outdoors. Milk will be particularly emphasized as a food source in the screening scenarios. The screening scenarios currently being considered include the rural family, urban/suburban family, migrant worker family, houseboat family, delivery person and outdoors person. CDC

has hired a contractor to conduct the screening analysis and collaborate with the Scenario Workgroup.

ATSDR has entered into a five-year cooperative agreement with ACPM to implement a capacity-building program with environmental health education activities related to I-131. ACPM is a national medical specialty society with more than 2,000 physicians who are Board-certified in preventive medicine and other specialties. Under the I-131 education project, ACPM will establish a central data source; facilitate exchange of information among affected sites; and design and disseminate materials to health care providers, community-based groups and other target audiences at the SRS, Hanford and Oak Ridge sites. During the implementation of the I-131 education project, ACPM will seek input from HESs and integrate new activities with existing community-based initiatives.

ATSDR distributed the pilot test of the draft Case Studies in Environmental Medicine. These documents serve as valuable tools for ATSDR to educate physicians, nurses and other health care professionals. An evaluation form asks health care providers to record the amount of time to complete the activity and rate the usefulness of the case studies. The draft document can be distributed only to health care providers at this time.

ATSDR circulated the draft report on the SRS environmental health education needs assessment. Data collected for the project will be used to develop tools and training for outreach activities and health education and promotion initiatives. During 18 focus groups with 110 community leaders in ten SRS counties, recommendations were made to SRSHEs and agencies participating in the needs assessment.

The suggestions related to modifying SRS environmental health materials to make them easier to read; revising current SRS communication channels to reach broader audiences; and collaborating with community leaders, schools, health care providers and other local organizations. These approaches will improve message delivery, enhance knowledge about SRS and provide science-based education. ATSDR requested assistance from SRSHEs in assigning a member to the project and engaging SRS health care professionals in the needs assessment.

SRSHEs reviewed new action and agenda items raised during the meeting and properly voted on consensus recommendations. The Chair opened the floor for public comment at all times as designated on the agenda. The next SRSHEs meeting is tentatively scheduled for September 12-13, 2002; September 5-6, 2002 was selected as the alternate date. Suggestions were made to hold the meeting in Hilton Head or Columbia, South Carolina or Atlanta or Savannah, Georgia.

DEPARTMENT OF HEALTH AND HUMAN SERVICES CENTERS FOR DISEASE CONTROL AND PREVENTION

SAVANNAH RIVER SITE HEALTH EFFECTS SUBCOMMITTEE *June 6, 2002* *Augusta, Georgia*

Final Minutes of the Meeting

The Department of Health and Human Services (HHS) and the Centers for Disease Control and Prevention (CDC) convened a meeting of the Savannah River Site Health Effects Subcommittee (SRSHES). The proceedings were held on June 6, 2002 at the Radisson Riverfront Conference Center in Augusta, Georgia. The following individuals were present to contribute to the discussion:

SRSHES Members

Dr. Sergio Bustos, Chair
Dr. William Adams
Mr. Cyril Banick
Dr. Todd Crawford
Mr. Gerald Devitt
Ms. Mary Drye
Ms. Emily Guess
Mr. Charles Hill
Mr. Warren Hills, Sr.
Ms. Jeanne Kato
Dr. Patricia Lee
Mr. Thomas Sanders, III
Ms. Dolly Still
Dr. Warren Umansky
Mr. Wade Waters
Mr. William Wills
Dr. Michael Wilson

SRSHES Liaison Representatives

Ms. Jane Perry (GDPH)
Ms. Kim Newell (SCDHEC)

Designated Federal Official

Mr. Phillip Green,
SRSHES Executive Secretary

Federal Agency Representatives

Ms. Yolonda Freeman (ATSDR)
Ms. Theresa NeSmith (ATSDR)
Ms. Dora Rainey (CDC/NCEH)
Dr. Robert Whitcomb (CDC/NCEH)

Presenters and Guests

Mr. Ed Arnold (PSR-Atlanta)
Dr. David Adcock (USC)
Ms. Dominique Benn (WRQW News)
Ms. Susan Bloomfield (GSC)
Dr. Ken Crase (WSRC)
Mr. Mark Crump (WRQW News)
Mr. William Hooker (Public)
Mr. Joe Hwang (ATL International)
Dr. Monica Jorque (SRS)
Dr. James Kirr (NARC)
Mr. Vernon McDougall (ATL International)
Mr. Jeffrey Newman (WSRC)
Dr. Donald Orth (Public)
Ms. Betsy Rivard (WAND)
Dr. Sandy Rock (ACPM)
Ms. Joanne Steele (ACE)
Ms. Bridgette Webb (WRQW News)

Opening Session. Dr. Sergio Bustos, the SRSHERS Chair, called the meeting to order at 8:53 a.m. and welcomed the attendees to the proceedings. He announced that two presentations scheduled on the agenda would not be made: the health consultation on potential tritium exposures at SRS and the overview of the Federal Advisory Committee Act (FACA) Charter. During this time, the floor would be opened for the members to deliberate on activities by the SRSHERS workgroups.

Mr. Phillip Green, the SRSHERS Designated Federal Official (DFO), added that Dr. Mark Evans, of the Agency for Toxic Substances and Disease Registry (ATSDR), offered to make the tritium presentation at a future meeting. In the meantime, however, a copy of Dr. Evans' slides was included in the pre-meeting briefing books.

Review of Meeting Minutes. Dr. Bustos entertained a motion to approve the previous meeting minutes. In an April 15, 2002 memorandum to Dr. Bustos and Mr. Green, Dr. Crawford provided comments on the document. Dr. Umansky moved to accept the minutes with Dr. Crawford's memorandum as an attachment; Mr. Waters seconded the motion. **There being no further discussion, the January 10-11, 2002 Draft SRSHERS Meeting Minutes were unanimously approved, attaching the amendment as noted in the record.**

Review of Current Action Items. Mr. Green's status report of the current action items is outlined below:

- A legible copy of ATSDR's slide illustrating kidney function was mailed to the SRSHERS members in February or March 2002.
- Information on the history of national notifiable disease reporting in the United States and the process states use to identify and voluntarily report notifiable diseases to CDC was included in the pre-meeting briefing books.
- The International Atomic Energy Agency (IAEA) default values would be discussed during a presentation by Dr. Robert Whitcomb of the National Center for Environmental Health (NCEH).
- U.S. Census data on populations in all Georgia and South Carolina counties from 1910-1990; gross demographics for both states; and a map illustrating population changes in selected Georgia and South Carolina counties were included in the pre-meeting briefing books or distributed during the meeting. Dr. Janet Heitgerd of ATSDR has expertise in Geographic Information Systems and offered to present more detailed information on Georgia and South Carolina demographics at a future SRSHERS meeting.

- A discussion of the membership, mission, purpose and expectations of the SRSHERS workgroups was scheduled on the agenda. Reports would also be made on the following outstanding assignments:
 - The Outreach Workgroup to finalize the SRSHERS brochure.
 - The Epidemiologic Data Workgroup to identify additional data sources.
 - The Agenda Workgroup to identify agenda items that were previously recommended.
 - The Community Summary Workgroup to present the final Phase II summary and call for an SRSHERS vote on the document.

Overview of the SRSHERS Workgroups. Although suggestions were made to merge some workgroups, several members pointed out that the mission of each workgroup should be clarified and clearly defined in writing before structural changes are made. Mr. Devitt proposed that each workgroup chair draft a statement outlining the function of each workgroup. Mr. Wills recommended that the Agenda Workgroup convene immediately after SRSHERS meetings to tentatively schedule future agendas and hold conference calls to confirm these items. He mentioned that the Agenda Workgroup needs extensive input from all SRSHERS members to facilitate this effort.

Dr. Bustos emphasized the need for the members to be fully informed about the agencies' expectations of SRSHERS. This feedback will be particularly important for the Epidemiologic Data and Scenario Workgroups. To conduct workgroup activities, he conveyed that members should be prepared to discuss issues and pose questions related to presentations and other information provided by the agencies. In addition to clarifying the mission of each workgroup, Ms. Kato remarked that specific products should be defined as well. This information can assist in publicizing workgroup activities to the entire SRSHERS and broader community.

Mr. Green mentioned that workgroups are tools for members to present items to SRSHERS for consideration and action. He announced that the proposed draft charter for Health Effects Subcommittees (HESs) has not yet been approved by ATSDR, NCEH and the National Institute for Occupational Safety and Health (NIOSH). However, the draft is not substantially different from the current charter. He committed to distributing the document to the members immediately after the draft is cleared for release to HESs. Mr. Green added that the current SRSHERS charter expires on July 7, 2002.

Dr. Umansky agreed with comments by Dr. Bustos and Mr. Green, respectively. First, the Epidemiologic Data Workgroup needs clear guidance in terms of the usefulness and effectiveness of data being gathered by the members. Second, the collective SRSHERS is chartered to provide advice to ATSDR and CDC. As a result, SRSHERS activities should not be conducted by individual workgroups. No members voiced opposition to SRSHERS rather than individual workgroups continuing to serve as the official outreach mechanism to the public. Dr. Bustos explained the purpose of some workgroups as set

forth below, but he encouraged the members to submit statements to further refine these functions. The definitions and workgroup assignments are as follows:

- Agenda Workgroup. Dr. Bustos as chair; Mr. Banick, Dr. Umansky and Mr. Wills as members. The workgroup holds conference calls to review and prioritize future agenda items proposed by SRSHES during meetings.
- Community Summary Workgroup. Dr. Bustos as chair; Ms. Drye, Mr. Lockridge and Dr. Umansky as members. The workgroup will disband after SRSHES approves the final Phase II community summary.
- Epidemiologic Data Workgroup. Dr. Umansky as chair; Mr. Devitt, Ms. Drye, Ms. Guess, Ms. Kato and Mr. Lockridge as members. The workgroup receives technical assistance from and closely collaborates with CDC to appropriately collect and review epidemiologic data.
- Membership Workgroup. Mr. Waters as chair; Dr. Adams, Mr. Devitt, Ms. Drye and Ms. Guess as members. The workgroup reviews the qualifications and credentials of applicants and makes recommendations to SRSHES on persons who should be considered for nomination.
- Outreach Workgroup. Dr. Adams, Mr. Banick, Dr. Dawson, Dr. Crawford, Ms. Kato and Dr. Wilson to serve as members; no chair was selected.
- Proactive Workgroup. Dr. Lee, Mr. Hills and Mr. Waters to serve as members; no chair was selected.
- Scenario Workgroup. Mr. Lockridge as chair; Mr. Devitt, Ms. Still and Mr. Waters as members. The workgroup receives technical assistance from and closely collaborates with CDC to address exposures to a variety of individuals in different situations around SRS.

Dr. Bustos recessed the meeting for a break from 10:00-10:28 a.m.

Occupational Illness Compensation Program (OICP). Dr. James Kirr, of the North Augusta Resource Center, explained that this activity provides compensation to persons who become ill as a result of work at facilities operated by the Department of Energy (DOE) and certain of its vendors, contractors and subcontractors. Congress passed the law for OICP in October 2000 and the program was implemented in July 2001. In August 2001, the Secretary of Labor made the first OICP payment. Congressional amendments to the program were enacted in December 2001 to address claimants' concerns related to rights of survivorship, succession and other issues. The

amendments determined the amount of fees attorneys could charge and clarified the survivorship language in terms of eligibility.

OICP is divided into two components. The federal program is administered by the Department of Labor (DOL) Office of Workers' Compensation Programs, while the state program is administered by the DOE Office of Worker Advocacy (OWA). The DOL federal component of OICP covers employees, contractors or subcontractors at DOE facilities; employees of DOE contractors, beryllium vendors or atomic weapons employers; survivors of deceased employees; and persons and survivors covered under Section 5 of the Radiation Exposure Compensation Act (RECA).

The following conditions are covered under the federal component of OICP: cancer, chronic beryllium disease, beryllium sensitivity, silicosis and other illnesses accepted under Section 5 of RECA. Claims can be filed for lung, bone, kidney, esophageal, non-Hodgkin's lymphoma, colon, skin and any other type of cancer; NIOSH will then perform a dose reconstruction to determine cause and effect. However, only workers who were actually involved in underground mining operations related to testing of nuclear weapons can file claims for silicosis. Persons can submit claims directly to DOL or obtain assistance in filing claims from one of ten resource centers throughout the United States.

Workers must provide medical documentation of an eligible illness and survivors must show proof of relationship to the worker. A verification form of DOE employment must be completed as well. This information is evaluated by DOL claims examiners. Silicosis and beryllium disease claims are immediately forwarded to the Final Adjudication Branch (FAB) to determine if compensation will be made under OICP. Cancer claims are forwarded to NIOSH for a radiation-dose reconstruction and cause/effect study. However, a dose reconstruction is not performed for cancer claims by workers at the Oak Ridge, Paducah and Portsmouth plants who were involved with gaseous diffusion processes to produce enriched uranium. Persons who developed cancer after working 250 cumulative days at one of the three atomic weapons facilities are automatically entitled to compensation.

After the data are evaluated, the claims examiner makes a recommended decision and notifies the claimant. Objections must be filed within 60 days; the recommended decision and any objections are then forwarded to FAB. If the claim is approved, employees will be compensated for covered medical costs associated with the eligible illness and receive a lump-sum tax-free payment of \$150,000. Survivors will also receive the lump-sum payment and be compensated for covered medical costs under an approved claim that were not paid before the employee's death. RECA claimants receive an additional \$50,000.

The federal component of the program is administered by the OICP National Office in Washington, DC; four district offices in Cleveland, Denver, Jacksonville, Florida and

Seattle; ten resource centers in areas with major DOE facilities; and the FAB. DOL shares responsibility for the federal component of OICP with DOE, but NIOSH, Department of Justice, Social Security Administration, corporate entities, medical providers, and claimants play a significant role as well. Of the 27,227 claims received as of May 2, 2002, 17,393 were for cancer; 909 for total beryllium sensitivity; 923 for chronic beryllium disease; 536 for total silicosis; 3,237 for RECA illnesses; and 4,229 for other medical conditions.

Of claims processed with a recommended decision, 3,419 were approved and 2,128 were denied. Of claims processed with a final decision, 3,026 were approved and 618 were denied. Of claims in a pending status, 6,242 are awaiting employment verification and 4,020 have been forwarded to NIOSH for dose reconstruction. Of 2,162 individual cases, 2,479 payments have been issued, since some deceased employees have multiple survivors. As of May 2, 2002, \$190.4 million has been paid. The OICP statistics are updated on a monthly basis; the DOL web site can be accessed to obtain the most recent information.

The state component of OICP administered by DOE assists DOE contractors in filing claims for state workers' compensation benefits for an illness caused by exposure to a toxic substance in the course of employment at a DOE facility. OICP directed DOE to establish a program to assist workers in this effort. HHS appoints panels of independent physicians with expertise in occupational illnesses to review medical and exposure records of claimants. The review process is completed within 30 days from the date of filing to determine if the illness was indeed caused by toxic exposure at a DOE site. If the physician panel recommends in favor of the claimant, OWA reevaluates the claim and makes a final determination.

DOE will assist workers or survivors whose claims were approved in filing a state workers' compensation claim. Eligible persons under the state component of OICP include past or present DOE contractors who worked at a DOE facility and survivors of eligible employees. Federal employees, atomic weapons employees, beryllium workers and employees at other facilities are not covered under this part of the program. Diseases caused by workplace toxic exposures are covered under the state component of OICP, such as heavy-metal poisoning, asbestosis, liver disease, nervous system disorders, non-cancerous respiratory problems, kidney disease and certain reproductive disorders.

Hearing loss, primary depression, carpal tunnel syndrome and lower back pain will not be reviewed by physician panels. Draft proposed guidelines for physician panels have been posted in the *Federal Register*. When the final rules have been published, DOE will begin the negotiation process with various states to conclude state agreements.

Discussion. Dr. Crawford noted that OICP criteria for doses are large compared to epidemiological studies of DOE workers. Efforts should be made to comply with

international guidelines for occupational exposure. The potential exists for OICP to set a precedent for doses that is inconsistent with established data. Dr. Kirr confirmed that this concern has been raised on numerous occasions and is currently being addressed by NIOSH. Ms. Guess cited a recent newspaper article that reported that most SRS claimants have not received compensation.

Dr. Kirr acknowledged that only one affected SRS worker has been paid under OICP to date. The delay is caused by the fact that any cancers caused by exposure at SRS must be evaluated by NIOSH. More than 200 SRS claims are currently being processed in terms of forwarding health physics data to NIOSH and finalizing the claims. Since NIOSH has now established its protocols and procedures for the dose reconstruction component of the claims process, Dr. Kirr anticipated that SRS workers will begin receiving compensation in late summer 2002. However, payments on claims under the state component of OICP will most likely not begin for the next six months. Final rules for physician panels must first be approved and published and agreements with states must then be developed.

Overview of Scenarios for the Radionuclide Screening Analysis. Dr. Whitcomb explained that in Phase I of the SRS dose reconstruction project, data were gathered to evaluate releases and processes at SRS from the 1950s to the present. In Phase II, data gaps were identified and filled in an effort to develop source terms for radionuclides and chemicals. The National Council on Radiation Protection and Measurements Report No. 123 was used as the data source for the preliminary screening analysis in this phase. The report outlines screening models for radionuclide releases to air, surface water and groundwater.

In Phase III, radionuclides released from the site that were of highest significance relative to human health effects will be determined. IAEA Safety Report Series No. 19 is being considered as the data source in this effort. The report describes generic models that can be used to assess the impact of discharges of radioactive substances to the environment. Pathways that can be considered in a screening analysis or dose assessment include atmospheric releases that can eventually be inhaled or ingested through food or water. The basic screening model will calculate the activity released, multiplied by dispersion factors in the environment, multiplied by a food transfer factor, multiplied by a human usage factor, and multiplied by a dose factor.

Two major data sources will be used to develop the Phase III screening model for exposure years 1955 through 1992. First, information gathered in Phase II will include radionuclides released; locations or release points of SRS releases; and annual amounts of each radionuclide released from each release point. Second, information on the exposed human population will include distance from release points; amount of air breathed; amount and source of potentially contaminated food and water ingested; and fraction of time spent outdoors for various activities. Default usage factors will be

applied in the screening model for data that cannot be gathered on the exposed human population.

Since IAEA is being considered as the Phase III data source to determine health effects from radionuclide releases, 2001 IAEA screening assumptions for milk intake, meat intake and breathing rate have been demonstrated to be consistent with those established by the U.S. Department of Agriculture in 1974. Screening scenarios are generally developed to represent typical members of the population, since lifestyles, cultural practices and other factors vary among individuals. To account for population differences, certain types of data will be collected for each screening scenario, such as age; location of residence, work, school, food sources and other activities; amount of foods consumed; breathing rate; and percent of time spent outdoors on various activities. Milk will be particularly emphasized as a food source in the screening scenarios.

CDC is currently considering six screening scenarios for Phase III of the dose reconstruction project. The rural family would have lived in the closest downwind area where farms could have been located in 1955. Adults as well as infants born in 1955 and 1964 will be considered since 1964 was the year of the highest radioiodine release. Reasonable and high default consumption values will be used. Persons would have spent a lot of time outdoors, extensively worked in the soil, consumed fresh milk from a backyard cow, and had crops irrigated from the Savannah River.

The urban/suburban family would have lived just downwind of the site boundary where urban/suburban families could have lived in 1955. Adults, infants and consumption values will be the same as those for the rural family. Persons would have worked at the nearest downwind industrial location in 1955 and consumed fresh milk from the nearest dairy or rural neighbor. The migrant worker family would have lived in the nearest downwind location where migrant workers could have lived and worked in 1955. Adults, infants and consumption values will be the same as those for the rural family. Persons would always have been outdoors and in contact with the soil; had crops irrigated by the Savannah River; and obtained food from local farms or grocery stores.

The houseboat family would have lived at the nearest docking location downwind where persons could have lived on houseboats in 1955. Adults, infants and consumption values will be the same as those for the rural family. Persons would always have been outdoors, in contact with the Savannah River and obtained food from local farms or grocery stores. The delivery person scenario has the same assumptions as adults in the urban/suburban family, but spends eight hours per week onsite.

The outdoors person would have lived in camps at the nearest downwind location that was appropriate for the season, *i.e.*, hunting or fishing. Consumption values will be the same as those for the rural family. Persons would always have been outdoors; spent eight hours per day on the Savannah River in the summer; spent eight hours per day

onsite during hunting or fishing season; and obtained food from nearby grocery stores. The study area for the SRS dose reconstruction project has been defined as 50 miles around the perimeter of the site; various counties and the downstream portion of the Savannah River are covered in the study area.

CDC previously asked SRSHEs to consider the appropriateness of the scenarios; recommend locations of residences, schools, work, food sources and other activities; and suggest other reasonable scenarios for the target populations. SRSHEs formed the Scenario Workgroup in response to this request. The members met in January 2002 to initiate the process of providing input to CDC on each acceptable scenario. Other progress on the Phase III activities include CDC's contract with Advanced Technology Laboratory International to conduct the screening analysis. The contractor will closely collaborate with the Scenario Workgroup and incorporate recommendations by SRSHEs in the screening analysis.

Discussion. Dr. Crawford inquired whether geographic locations associated with the scenarios have been selected. Dr. Whitcomb replied that the Scenario Workgroup will assist in this effort, such as identifying cattle and horse ranches near SRS for the migrant worker family scenario. Dr. Umansky emphasized the importance of considering persons of different ages in the scenarios. For example, older individuals would have been exposed for longer periods of time, while younger persons with rapid cell growth would have more potential for damaging health effects.

Dr. Whitcomb confirmed that the ages of individuals are definitely being considered during the scenario development process. Ms. Kato questioned the rationale for applying IAEA standards in the screening analysis since SRS employees are physically larger than an average international population. She also noted that the proposed screening scenarios presented by Dr. Whitcomb do not reflect additions, changes and other recommendations SRSHEs made during the previous meeting.

Dr. Whitcomb clarified that default values used by IAEA are only being considered at this point. The Scenario Workgroup has been asked to provide site-specific information that may differ from the IAEA screening assumptions and be more reasonable for the SRS area. The workgroup is also considering other usage factors. He added that the screening scenarios are still in the development stage; the final product by the workgroup will reflect changes and other recommendations made by SRSHEs.

Dr. Bustos planned to discuss the time-line of activities with Mr. Lockridge, the Scenario Workgroup Chair. He wanted to ensure that progress in developing the screening scenarios was not delayed. Dr. Wilson asked about the process to determine a downwind location, such as the direction the wind blows on a particular day. Dr. Whitcomb explained that in developing some screening scenarios, the wind is forced to blow 25% of the time and in a particular downwind direction during a given year. The actual scenarios are unrealistic, but the calculations are based on existing data.

Public Comment Period. Mr. William Hooker was contracted from 1992-1999 to trap hogs and beavers from 53 locations at SRS. During the removal of beaver dams that contained tritium, uranium and other toxic substances, contaminated water moved to the Savannah River. Workers involved with this project have reported thyroid disease, heart attacks, back pain, skin cancer and bone problems. Spouses of the workers have reported similar adverse health effects in addition to reproductive problems. Mr. Hooker was not pleased with NIOSH's report on the project because the document contains false statements by DOE.

For example, the contract stated that the "work environment would be normal except for snakes; no toxicological hazards would be associated with the work." However, he confirmed that large amounts of tritium were indeed used at beaver ponds on the work site. Moreover, equipment was not checked; personal protective equipment was not used, permits were not obtained; monitors were not changed; animal samples were not collected or evaluated; and HAZWOPPER (hazardous waste operations and emergency response) training was not provided or required. Overall, Mr. Hooker strongly emphasized that DOE did not protect its contractors. For additional information on the project, he encouraged SRSHEs to contact him at wdhooker@hotmail.com or 706/863-7578. Dr. Bustos recessed the meeting for lunch from 11:49 a.m. to 1:18 p.m.

Status Reports by the SRSHEs Workgroups.

Epidemiologic Data Workgroup. Dr. Umansky, the workgroup chair, reiterated that the members are awaiting guidance from NCEH in identifying the most useful and effective information to collect for Phase III of the dose-reconstruction project. This input will be necessary before the workgroup engages in more time-consuming efforts to gather additional epidemiologic data and advance the Phase III dose-reconstruction project. Technical assistance from NCEH epidemiologists is also needed to define the workgroup's future direction in terms of accessing available resources and existing data.

Another area of uncertainty is the workgroup's role in providing information that will be useful to the population surrounding SRS. For example, the workgroup could collect data to inform these individuals and then forward the information to the Outreach Workgroup. With respect to outstanding action items, Dr. Umansky reported that the workgroup contacted Physicians for Social Responsibility (PSR) to inquire about its database on adverse health effects related to nuclear facilities. The organization has not responded to the workgroup to date. Mr. Green announced that the NCEH epidemiologist assigned to assist the workgroup has taken another position. He would provide a status report to Dr. Bustos on NCEH's plans to fill this position.

Ms. Kato inquired whether the workgroup considered her previous suggestion to review epidemiologic data from other sites, particularly locations with the same 12 radionuclides or 22 toxic chemicals as SRS. Dr. Umansky explained that the

workgroup's charge is to only focus on SRS releases, but the possibility exists of expanding to other sites in the future. Before undertaking a broader effort, however, the workgroup will first review non-SRS data previously collected by the agencies and determine whether the information will be useful to the SRS Phase III dose-reconstruction study.

Mr. Devitt pointed out that a strong focus on detailed epidemiologic data may be premature at the current stage of the Phase III dose-reconstruction study. For example, data collected by the workgroup in the future may show that actual exposures are too low to show health effects. As a result, an epidemiologic study would be unnecessary. Dr. Lee agreed the epidemiologic studies may show no cause/effect relationship, but her understanding was that the workgroup was charged with collecting data to educate the SRS population. However, she agreed that resources should not be exhausted in conducting activities for an epidemiologic study that may not be undertaken. Overall, Dr. Lee supported the continuation of the workgroup activities for educational purposes.

Dr. Umansky confirmed that the workgroup's function is to provide an educational foundation for SRSHER to interpret data provided by other sources. In this effort, the workgroup gathers relevant studies that have been completed on SRS releases and potential impacts to SRS target populations. Dr. Bustos asked the members to weigh in on whether the agencies need to approve efforts by SRSHER to collect epidemiologic data and educate the public. Dr. Lee's position was that as an advisory group, SRSHER should engage in a dialog with the agencies to ensure ongoing activities are appropriate.

However, Ms. Kato conveyed that the credibility of SRSHER as a source of information to the public could be weakened if data are only reviewed based on direction, guidance or approval from the agencies. She raised the possibility of gathering independent information. Dr. Bustos remarked that the workgroup is only charged with reviewing, evaluating and disseminating existing data. Undertaking efforts beyond this scope would be under the purview of epidemiologists.

Mr. Wills recalled that SRSHER previously discussed the possibility of engaging outside epidemiologists from Georgia and South Carolina to assist the workgroup in collecting data. Ms. Guess agreed that an independent epidemiologist not associated with CDC should be consulted. Mr. Green confirmed that this request will be conveyed to NCEH. Dr. Crawford indicated that an implementation plan should be developed if the workgroup's function is to internally educate SRSHER members. For example, data collected by the workgroup could be copied and distributed to each member for an independent review or brief courses on the materials could be given during SRSHER meetings.

Agenda Workgroup. The workgroup did not provide an update, but an outstanding action item was addressed. Since SRSHER is chartered as a community representative

to provide advice to the agencies on public concerns, Dr. Crawford inquired about the disposition of previous recommendations. No action was taken on Dr. Lee's previous suggestion for the workgroup to identify agenda items that were previously recommended and report outstanding issues to SRSHER. As a result, the recommendation would be reinserted on the new list of action items. Mr. Green advised the members to clearly define recommendations and action items with as much specificity as possible. This approach will allow the agencies to appropriately respond to SRSHER.

Outreach Workgroup. Dr. Bustos reported that the SRSHER brochure has not been completed. Dr. Mildred McClain, the former workgroup chair, will be contacted to obtain comments from former and current members on the brochure and determine the status of the document.

Community Summary Workgroup. Dr. Bustos, the workgroup chair, announced that the current version of the Phase II community summary distributed in the pre-meeting briefing books reflects changes SRSHER proposed during the previous meeting. Agreement was reached for the members to submit additional revisions to Dr. Bustos. The current version will be finalized based on this input, circulated to the members and placed for a vote. In the interim, however, the following suggestions were made.

- Explicitly state that 1955-1992 are the years being evaluated in the SRS dose reconstruction project.
- Change the first sentence in the second paragraph to "Five nuclear production reactors operated at SRS at various times from 1954-1988."
- Change the second sentence in the first paragraph to "When completed, the study will help determine if the health of people ..."

Update on ATSDR's Educational Activities. Dr. Sandy Rock, Project Consultant to the American College of Preventive Medicine (ACPM), described a capacity-building program to conduct environmental health education activities related to iodine-131 (I-131). ACPM is a national medical specialty society for physicians committed to disease prevention and health promotion and is one of 25 medical specialties recognized by the American Board of Medical Specialties. ACPM represents more than 2,000 physicians who are Board-certified in preventive medicine and other specialties.

ACPM physicians are uniquely qualified in public health and clinical preventive medicine; provide leadership in communities or health settings to bridge the gap between the two disciplines; and are needed to provide services that reduce disease, disability and death in populations. ACPM physicians possess a range of competencies, including biostatistics; epidemiology; environmental and occupational health; planning, administration and evaluation of health services; social and behavioral aspects of health and disease; clinical preventive medicine; and informatics.

ACPM has had an environmental health agreement with ATSDR since 1999 to increase awareness among physicians and other health care providers of health threats posed by exposure to hazardous environmental substances. Under this activity, ACPM also improves the capacity of physicians to apply tools of population-based medicine and prevention to environmental health problems. ATSDR contracted ACPM to conduct the I-131 capacity-building program due to its demonstrated track record in this area. ACPM assisted with the development of ATSDR's I-131 Case Study in Environmental Medicine; presented an I-131 poster and conducted an I-131 session at national meetings; and participates on the National Cancer Institute (NCI) I-131 list server.

ACPM strengths in conducting I-131 education are based on its experience in I-131 issues and environmental health; status as a national medical society; expertise of participating members; capacity to offer continuing medical education (CME) credits; partnership with the American College of Medical Toxicology; and collaboration with a knowledgeable consultant. The goals of the ATSDR/ACPM five-year agreement for the I-131 education project are to establish a central source of credible and science-based data; facilitate exchange of information, lessons learned and tools among affected sites; and develop and disseminate educational information to specific target audiences.

The target audiences for the project include clinicians, public health practitioners, community-based groups, educational institutions, and the general public at the SRS, Hanford and Oak Ridge sites. ACPM has proposed the following activities to conduct the project: develop an I-131 web-based resource center, establish a communication network among sites, conduct telephone surveys, form project advisory committees, disseminate the ATSDR case study, hold I-131 sessions at ACPM annual meetings, facilitate telephone conferences, design educational materials, and implement onsite educational activities.

ACPM's methodology to conduct the I-131 education program contains four major components: a flexible work plan and activities, input from HESs and other stakeholders, integration with existing community-based initiatives, and experience from past and present projects. Due to public concern about potential nuclear disasters, ACPM incorporated a section on potassium iodide in its work plan. Other activities will also be modified in the future based on public input.

To date, ACPM has participated in meetings and conference calls with ATSDR, CDC and NCI; designed a comparison chart to track I-131 projects at various sites; attended SRS HES and Hanford HES meetings; formed a technical advisory committee; and initiated development of the I-131 web site. ACPM's session at its 2001 annual meeting was conducted by several presenters with solid expertise in I-131. These presentations and links to other I-131 resources can be accessed by the public on the ACPM web site.

Ms. Theresa NeSmith of ATSDR announced that the draft Case Studies in Environmental Medicine were distributed to SRSHEs. These documents serve as valuable tools for ATSDR to educate physicians, nurses and other health care professionals. Since the draft is currently being pilot tested, an evaluation form is attached to the document that asks health care providers to record the amount of time to complete the activity and rate the usefulness of the case studies. This input will allow ATSDR to revise and finalize the case studies and assign CME credits.

Ms. NeSmith urged SRSHEs to distribute the draft document to health care providers only during the pilot test. In terms of outstanding issues, she reminded the members that Dr. Karl Markiewicz of ATSDR made a presentation during the last meeting on the toxicity of heavy metals and radionuclides. If SRSHEs desired additional information on this subject, Dr. Markewicz is willing to be placed on a future SRSHEs agenda.

Ms. Yolanda Freeman of ATSDR provided a status report on the SRS environmental health education needs assessment. The purposes of this activity are to gather useful information for all communities and agencies involved at SRS as well as to develop and implement a public health action plan in partnership with communities. Data collected for the project will be used to develop tools and training for outreach activities and health education and promotion initiatives. The draft report on the needs assessment was included in the pre-meeting briefing books.

To gather input for the needs assessment, ATSDR conducted 18 focus groups with 110 community leaders in ten counties within a 50-mile radius of SRS. The data showed that focus group participants had a general lack of knowledge of SRS activities; expressed concerns about respiratory illnesses, cancer, chemicals, SRS initiatives and health effects; placed most trust in health care providers to provide health information; and preferred receiving printed materials from churches. The focus group participants made several recommendations to SRSHEs and agencies participating in the needs assessment. Existing SRS environmental health materials should be modified to be easier to read and understand. Current communication channels used by SRS should be revised to reach broader audiences.

Communication channels and media formats identified and recommended by communities should be utilized, such as news outlets, printed materials, Internet, and self-study courses. The effectiveness of these communication channels should be analyzed for effectiveness. Community suggestions to expand SRS participation in outreach activities should be implemented. SRS should collaborate with community leaders, schools, health care providers and other organizations to deliver messages, improve knowledge about SRS and provide science-based education. Follow-up activities should be evaluated on an ongoing basis.

Community leaders who participated in the needs assessment were extremely appreciative of capacity-building skills obtained during the project. ATSDR trained

participants in facilitation, data analysis, and focus groups. The needs assessment also provided an opportunity for community leaders to network and build coalitions for grant writing and other initiatives at the local level. To advance the project, however, ATSDR needs assistance from SRSHEs from both community and health care provider perspectives. First, Dr. McClain spearheaded the effort and served as the driving force for the community-based component of the SRSHEs needs assessment, but her term has expired. Nevertheless, ATSDR will continue to seek Dr. McClain's expertise in the project.

Second, ATSDR's efforts to engage SRS health care professionals in the needs assessment have been unsuccessful. Involvement from this group will be critical since community leaders cited health care providers as the most trusted source of health information. ATSDR also asked the members to review the draft needs assessment report and suggest mechanisms to deliver messages to communities, such as the SRSHEs brochure and periodic updates. ATSDR hopes to discuss these recommendations during the next meeting.

Discussion. Ms. Kato inquired about feedback ACPM has received on the I-131 educational materials. Dr. Rock replied that ACPM has not obtained input to date because the five-year project was not initiated until October 2001. Mr. Hills asked about pathways for SRS populations to become exposed to I-131 and potential health effects. Dr. Rock explained that during the initial years of operation at SRS, I-131 was released in the air and deposited on vegetation consumed by dairy cows. Persons who consumed milk contaminated with I-131 would be at risk for damage to the thyroid. Other potential pathways for I-131 include goat milk, consumption of leafy vegetables or inhalation from a downwind plume.

Ms. Perry was pleased that ACPM plans to share data among impacted sites to avoid duplicating existing efforts. She raised the possibility of the Outreach or Proactive Workgroup gathering information from other HESs on experiences and ongoing activities of these groups. Dr. Lee proposed that ATSDR's requests to SRSHEs on the needs assessment be assigned to the Outreach Workgroup. Recommendations could then be presented to SRSHEs for review and comment before being presented to ATSDR. Ms. Kato wanted to ensure that all SRSHEs members were provided an opportunity to give input on the next steps of the needs assessment. To engage health care providers in the needs assessment, Dr. Wilson offered to develop a quick and simple form that would be designed to obtain effective information. Dr. Bustos recessed the meeting for a break from 2:45-3:16 p.m.

Public Comment Period. Mr. Ed Arnold, Director of the Atlanta chapter of PSR, confirmed that he will follow up with Dr. Umansky's request for epidemiologic guidance. He was grateful that the SRSHEs forum is available to the public. He encouraged members with more experience on SRSHEs to appreciate the fact that new members

can also raise useful perspectives. He underscored the importance of welcoming innovative concepts, since current science can be flawed.

For example, scientists and epidemiologists previously reported that particulate matter does not cause cancer. However, recently published studies show that particulate matter in the air causes morbidity and mortality throughout the country. Mr. Arnold advised SRSHEs to avoid minimizing the value of anecdotal reports because this type of information is the foundation of epidemiologic data. He asked to review previous SRSHEs minutes since these documents contain anecdotal data that were presented at prior meetings. Mr. Green committed to following up on this request and reporting back to Mr. Arnold.

New SRSHEs Business. The action and agenda items raised during the meeting were reviewed by SRSHEs. For the consensus recommendations, motions were entertained by the Chair, properly moved and seconded by voting members, and unanimously approved by SRSHEs with no opposition. The items are outlined below:

Action Items

- The DFO to contact Dr. Mildred McClain and gather comments on the SRSHEs brochure provided to her from both former and current members.
- The DFO to collaborate with Ms. Kim Newell, of the South Carolina Department of Health and Environmental Control (DHEC), in identifying staff to provide technical expertise to the Epidemiologic Data Workgroup. Ms. Newell to also serve on the workgroup.
- The DFO to distribute CD-ROM versions of the Phase I and Phase II SRS dose reconstruction reports to new SRSHEs members. Hard copies of the documents to be displayed at future meetings for members to reference during meetings.
- The DFO to provide SRSHEs with two-sided copies of meeting materials whenever possible.
- The Agenda Workgroup to identify agenda items that were previously recommended and report outstanding issues to SRSHEs.

Agenda Items

- Presentation on all aspects of the SRS monitoring program, *i.e.*, exposure evaluation of contractors, full-time workers, hunters with dogs, and migrant workers, as well as sampling activities for animals.

- Anecdotal reports of the SRS monitoring program. [Dr. Ken Crase of SRS and the *Memphis Tennessean* to be considered as anecdotal data sources.]
- Presentations scheduled for the June 2002 meeting, but not made: overview of the FACA Charter by CDC and the health consultation on potential tritium exposures at SRS by ATSDR.
- Review of NIOSH protocols and procedures for individual dose reconstruction of OICP claimants and personal experiences by approved and rejected claimants.

Consensus Recommendations

- SRSHEs recommends that the Community Summary of the Phase II SRS dose reconstruction project be accepted as amended and the modified version be distributed by CDC.
- SRSHEs recommends that two members serve on ACPM advisory committees: Dr. Crawford on the Technical Advisory Committee and Ms. Kato on the Educational Advisory Committee.

Several follow-up comments were made in response to the new action and agenda items. Ms. Jane Perry, of the Georgia Division of Public Health, will determine whether this agency can also provide technical expertise to the Epidemiologic Data Workgroup. She committed to asking if the Georgia Department of Natural Resources (DNR) is willing to present its comprehensive sampling plan of SRS at a future meeting. Dr. Whitcomb pointed out that the Phase II dose reconstruction report contains comparative data of monitoring activities completed by DHEC and DNR as well as anecdotal data from retired SRS workers. This information was also presented to SRSHEs at a previous meeting.

Mr. Devitt emphasized the need for the members to recommend action and agenda items that are within the purview of the SRSHEs charter. Dr. Whitcomb agreed with this observation and pointed out that NCEH's request for the Scenario Workgroup to provide input on screening values should serve as a priority for SRSHEs. The members generally agreed to individually access the ACPM web site to review presentations on I-131 relative to historical releases at DOE sites worldwide, exposures and radiation health effects. No action was taken on the request for a potassium iodide presentation since the drug is not relevant to historical releases of I-131 at SRS.

Closing Session. The next SRSHEs meeting is tentatively scheduled for September 12-13, 2002; September 5-6, 2002 was selected as the alternate date. Suggestions were made to hold the meeting in Hilton Head or Columbia, South Carolina or Atlanta or

Savannah, Georgia. SRSHES applauded Mr. Green and the other NCEH staff members for facilitating the SRS tour on the previous day.

There being no further discussion, Dr. Bustos adjourned the SRSHES meeting at 4:33 p.m.

I hereby certify that to the best of my knowledge, the foregoing minutes of the proceedings are accurate and complete.

Sergio E. Bustos, D.D.S., Ph.D.
SRSHES Chair