



## **SRS Citizens Advisory Board**

### **Combined Committees Meeting**

#### **Meeting Summary**

August 28, 2001  
SC Advanced Technology Park at Snelling  
Barnwell, SC

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**The following were in attendance at the August 28, 2001, Combined Committee meeting held at the SC Advanced Technology Park at Snelling, Barnwell, SC.**

#### **CAB Members**

David Adcock  
Nancy Ann Ciehanski  
Gerald Devitt  
Mel Galin  
Perry Holcomb  
Vera Barnes Jordan  
William Lawrence  
J.G. Long  
Jimmy Mackey  
Lola Richardson  
Murray Riley  
Heather Simmons  
Marty Stringer  
Jean Sulc  
Bill Vogele  
Wade Waters  
Carolyn Williams  
Bill Willoughby

#### **Stakeholders**

Jim Pope  
Ellie Galin  
Lynn Waishwell, CRESP  
Brandon Haddock  
Bill Lawless

#### **Regulators**

Chuck Gorman, DHEC  
Thomas Rolka, DHEC  
Jeffrey Joyner, DHEC

#### **DOE/Contractors**

George Mishra, DOE  
Julie Petersen, DOE  
Philip Prater, DOE  
Bill Brasel, DOE  
Ray Hannah, DOE  
Drew Grainger, DOE  
Larry Ling, DOE  
Donna Ridgely, DOE  
Kim Rapp, DOE  
Patrick Jackson, DOE  
Winchester Smith, DOE  
Rod Rimando, DOE  
Thomas Johnson, DOE  
Sachiko McAlhany, DOE  
Howard Walls, WSRC  
Teresa Haas, WSRC  
Paul Deason, WSRC-SRTC  
Elmer Wilhite, WSRC-SRTC  
Mark Phifer, WSRC-SRTC  
Tom Butcher, WSRC-SRTC  
Janet McClearen, BSRI  
Palmer Bowen, SRFS  
Kim Hauer, WSRC  
Ron Malanowski, WSRC  
Sonny Goldston, WSRC  
Kelly Dean, WSRC

Chuck Hayes, WSRC  
Paul Sauerborn, WSRC  
Helen Villasor, WSRC  
Donna Martin, WSRC  
Jim Moore, WSRC

**SRS CAB Members Meryl Alalof, Sallie Connah, Beckie Dawson, Ken Goad, Brendolyn Jenkins, Karen Patterson and Maria Reichmanis were not in attendance.**

**The objective of the meeting was to hear presentations on the effects of eliminating compaction of job control waste, Consolidated Incineration Facility (CIF) Focus Group update, Solid Waste Program update, High Level Waste Program update, Savannah River Site (SRS) Science and Technology Program, National Environmental Policy Act (NEPA) status update, long-term stewardship workshop trip report, mixing zones – SRS application, F&H Area groundwater remediation update, Integrator Operable Unit (IOU) program update, Old Radioactive Waste Burial Ground (ORWBG) implementation plan and the Americium/Curium (Am/Cm) stabilization project plan.**

**Mike Schoener facilitated the meeting and made the following announcements:**

- **The Environmental Justice Community meetings scheduled for September have been canceled. Dawn Haygood will issue an updated schedule.**
- **All CAB members should submit any outstanding expense vouchers as soon as possible.**
- **Lunch will be served at the meeting facility due to the distance to eating establishments. Cost for non-CAB members will be eight dollars.**
- **The Site Specific Advisory Board (SSAB) groundwater workshop will be sponsored by the SRS CAB on November 8 – 10. Any CAB member interested in participating should contact Dawn Haygood. A sign up list was passed around with the following CAB members signing up to participate: Murray Riley, Bill Willoughby, Jean Sulc, Jerry Devitt, William Lawrence, Lola Richardson, Jimmy Mackey, Marty Stringer, and Nancy Ann Ciehanski.**
- **Self evaluation surveys need to be turned in.**
- **The end of the CAB membership application solicitation is August 31. Anyone who had someone interested in sending in an application needs to do so immediately.**
- **The CAB Administrative Committee will meet on September 14 to review the applications. The meeting will be at the Savannah Rapids Pavilion starting at 8:30 a.m.**
- **The article in USA Today on the SRS ecology effort will be distributed to the CAB members.**

**Teresa Haas introduced Howard Walls, the new Vice President of the Public Affairs Division replacing John Lindsay. Mr. Walls said he was pleased to be involved with the SRS CAB. He stated that the SRS CAB has a national reputation for being a model public involvement program. He will continue to visit and give support to the CAB indicating his door was always open if anyone wanted to contact him for any reason.**

#### **Waste Management Committee**

**Wade Waters opened the Waste Management Committee (WMC) section of the Combined Committee Meeting by announcing that a Consolidated Incineration Facility (CIF) Focus Group meeting has been scheduled for October 16, 2001. Mr. Waters said that Helen Belencan, DOE-HQ would attend the meeting to provide an update on the DOE-HQ team's work on alternative technologies to incineration. Mr. Waters also announced that two other meetings, the WMC**

meeting scheduled for September 25, and the CIF Focus Group meeting scheduled for September 26 had to be cancelled because of schedule conflicts. Mr. Waters asked Helen Villasor to send out revised meeting announcements when new dates have been scheduled. Mr. Waters then introduced Elmer Wilhite, who was the WMC's first presenter.

### Effects of Eliminating Compaction of Job Control Waste

Elmer Wilhite provided an update to an earlier presentation provided on the effects of eliminating compaction of job control waste to the WMC on July 11, 2001. At the earlier presentation, Mr. Wilhite was asked to come back and update the WMC on the completion of the study as to whether the Solid Waste Division (SWD) should continue compacting waste for trench disposal. Mr. Wilhite said that since the study had been completed, he was here today to respond to the WMC's request.

Mr. Wilhite opened his presentation by explaining the Technical Basis for DOE Authorization of LLW Disposal, and showing a photograph of the Engineered Trench that is now operational at the E-Area Waste Management Disposal Facility. Mr. Wilhite commended the CAB for its interaction to endorse disposal of LLW in trenches that meet the trench WAC (Recommendation #94, "Solid Waste Division System Plan Low-Level Radioactive Waste Disposal"). Mr. Wilhite said that this recommendation, along with an analysis of the disposal of low-level waste (LLW) included in Revision 1 to the Performance Assessment approved by DOE-HQ last year, allowed SRS's Solid Waste Division (SWD) to expand the use of trenches to more cost-effectively dispose of LLW while ensuring protection of the public and the environment.

Speaking in terms of waste compaction, Mr. Wilhite said that LLW has been compacted in the SRS Super Compaction Facility (SCF) since June 1999. The waste is first sorted in the Waste Sort Facility (WSF) and then loaded into 55-gallon drums for compacting. The compacted drums, or "pucks" as they are commonly known, are then loaded into B-25 boxes for disposal. The B-25s containing the compacted waste that meets the trench WAC are disposed in both slit and engineered trenches located in E Area.

In response to the CAB's question if SWD should continue compacting waste for trench disposal, Mr. Wilhite said that it is important to remember that SRS must stay within the authorization basis (i.e., PA/CA); the PA assumes maintenance of the cap for 100 years; cap maintenance will be driven by subsidence repair; the decision must assess the cost of cap maintenance as a function of waste compaction; and either option (compacting or not) is bounded by the PA/CA.

Mr. Wilhite continued by noting that the completed cost study of treatment versus long-term cap maintenance included estimating subsidence potential with and without compaction; estimating subsidence potential reduction by pre-capping treatment, i.e., standard dynamic compaction (SDC) or tertiary (improved) dynamic compaction (TDC); estimating closure cap maintenance costs; and developing a recommendation as to cost-effectiveness of waste compaction. Mr. Wilhite explained the difference between supercompaction of 55-gallon drums, and dynamic and tertiary dynamic compaction of a trench site and said it was important to keep the difference in mind since they are distinct operations. Mr. Wilhite then presented flow diagrams and charts that discussed the waste/subsidence treatment methods that had been evaluated and the cost comparisons of the two best cases.

Mr. Wilhite concluded his presentation by providing the results of the study, which are as follows:

- B-25 Boxes lead to a large inherent subsidence potential
- Costs are dominated by subsidence repair, WSF/SCF, and B-25 boxes
- Most uncertainty lies in subsidence repair costs and B-25 box corrosion and collapse timing

- Only TDC and WSF/SCF combined with TDC reduce subsidence potential by more than 50 percent
- TDC alone is the most cost-effective of the treatment methods analyzed (using cap replacement repair)
- WSF/SCF combined with TDC versus TDC alone reduces subsidence potential by an additional seven inches only and decreases required engineered trench area by 42 percent

### Consolidated Incineration Facility (CIF) Focus Group Update

Bill Lawless, technical lead for the CIF Focus Group said the key issue that still concerns the CAB is the April 1, 2002 decision date, whereby, DOE must make a decision whether or not to restart CIF. Dr. Lawless said the CAB believes that DOE is running out of time to ensure that funding is available for CIF activities; developing a closure plan; finding a proven acceptable alternative technology; considering optimizing CIF as a major alternative; and seeking a new operating permit. Dr. Lawless said that since CIF is already a proven technology it should remain a viable option until an alternative technology has been demonstrated and all the PUREX legacy waste is treated. Dr. Lawless said that the original inventory consisted of 42,000 gallons of PUREX legacy wastes and only 5,000 gallons had been treated before CIF was placed in a suspension mode. Currently, there are 37,000 gallons of PUREX legacy waste in storage, with an additional 100,000 gallons slated for future disposal. Based on the regulatory commitment in the SRS Site Treatment Plan, SRS is mandated to treat one half of the legacy waste by 2009.

Dr. Lawless reviewed the regulatory challenges SRS faces because of the April 1, 2002 decision date. However, it was noted that if there is sufficient justification to further extend the deadline, SRS can submit a permit modification request for an extension to the closure/dismantlement decision of CIF. Dr. Lawless then discussed the Optimization Study, which had just been presented to the CIF Focus Group on August 21, 2001. In the study, Dr. Lawless said that there are three operational constraints, which include radiological inventory control, secondary waste disposal and radiological contamination control. The impacts to inventory control and secondary waste disposal include minor costs; however, upgrading the facility for contamination control would be the major expense to optimizing CIF. Dr. Lawless said that while the costs for the optimization of CIF have not yet been disclosed, the Focus Group is expecting to learn what they are at the October 16, 2001 CIF Focus Group meeting.

### Solid Waste Program Update

Sonny Goldston opened his presentation by updating the CAB on the Paper Pellets program. Saying that SCDHEC granted approval to SRS on August 8, 2001 to conduct stack testing of A-Area boilers based on the paper pellet test plan, SRS will begin testing with just coal on August 29, and with 50 percent pellets/50 percent coal mixture on September 12, 2001.

Mr. Goldston also gave an update on the Metals Disposition Programmatic Environmental Impact Statement (PEIS), which will evaluate options for the disposition of DOE scrap metals that may have residual surface radioactivity. Public scoping meetings were held July 31, 2001 and more than 100 stakeholders attended, including CAB member, Bill Willoughby. Mr. Goldston reviewed some of the comments that were provided at the meetings and noted that the public comment period is due to end on September 20, 2001. Wade Waters said that the WMC had already sent a letter to the PEIS manager requesting the public comment period be extended so the CAB would have an opportunity to participate. The CAB does not meet until October 23, 2001; therefore, an extension would provide the CAB with the opportunity to hear discussion and participate in the public comment period through the recommendation process.

Mr. Goldston referred to a poster that depicts SRS's three major shipments of waste offsite. On May 8, 2001, the first shipment of Transuranic (TRU) waste left for the Waste Isolation Pilot Plant

(WIPP). Mr. Goldston provided information on the four shipments that have already been made and the three more shipments expected to be completed by the end of September. Mr. Goldston said that adhering to this schedule would permit SRS to receive the first shipment of the Mound waste by the end of September.

Mr. Goldston also spoke of the first Mixed Low-Level Waste (MLLW) shipment that left SRS on August 2, 2001 and the first shipment of LLW to the Nevada Test Site on July 11, 2001. Mr. Goldston provided further information on the second LLW shipment that was scheduled to leave SRS on July 25, 2001. Mr. Goldston said this shipment was suspended because a small amount of mercury (about two tablespoons) leaked from a Sealand container. The mercury, found in a pipe from the 232-F floor drain system, was collected and found to have no radioactive contamination. Mr. Goldston said that SWD is continuing to use records, research, radiography and assessing the results of repackaging and re-characterization to investigate the source of mercury that leaked from the container.

### High Level Waste (HLW) Program Update

Larry Ling began his presentation by noting that the topics he planned to address include the tank closure schedule, HLW waste tank possible closure changes, the Tank Closure Environmental Impact Statement (EIS) and current HLW activities.

Mr. Ling said that the tank closure overall schedule had recently been reviewed for practicality; therefore, indicating there could be some schedule changes. HLW is working closely with SCDHEC on the Federal Facilities Act (FFA) agreement and will be meeting again with the regulators on September 26, 2001. Mr. Ling said that HLW is expecting to close Tank 19 in July 2003 and Tank 18 in July 2004. However, Mr. Ling said it would be more cost effective if the two tanks could be closed together – thereby completing closure of the first Four-Pack. Tank 14 is scheduled for closure in 2010 and Tanks 5 and 6 are under consideration.

In terms of current HLW activities, the Defense Waste Processing Facility (DWPF) began a planned outage on August 25, 2001. The outage is expected to last for three weeks, Mr. Ling said. As of August 25, 2001, Mr. Ling said 227 cans had been poured and HLW is projecting that between 250 and 280 cans will have been poured by September 30, 2001, the end of the Fiscal Year. Mr. Ling said that the Draft Tank Closure EIS is currently at DOE-HQ for review and the Final EIS is expected by September 7, 2001.

In closing, Mr. Ling said that modifications to tie Tank 49 into the H-Tank Farm Transfer system is complete and Tank 49 is expected to be back in service for HLW in Fall 2001. Tank 50 is expected to be back in service for HLW by 2002.

### Strategic and Long Term Issues Committee

Mel Galin, Chair, reviewed the list of CAB members who were the leads for the different committee topics.

### SRS Science and Technology Program

Patrick Jackson, DOE, reviewed the value of the Environmental Management (EM) science and technology program, which is the reduction in cost and time for cleanup. The SRS program is now under Tom Heenan, DOE. The keys to success are effective partnerships, strong and visible technical expertise and active identification and resolution of technical issues. The SRTC is the lead laboratory for Subsurface Contaminants Focus Area (SCFA). As the lead laboratory, the SRTC coordinates technical assistance from every laboratory in the DOE complex. Benefits of the technical assistance program are access to world class experts, rapid response, transfer of

innovative technologies and multi-disciplinary approaches resulting in cost effectiveness. This assures science-based developments are fully utilized.

### Overview of the Savannah River Technology Center (SRTC)

Dr. Paul Deason, deputy director of SRTC, reviewed the mission of SRTC, which is to apply the best science in the development of practical and effective technological solutions that provide maximum value for DOE. Dr. Deason reviewed some of the areas in which SRTC is involved. The role of science and technology is vital to the success of SRS because they support plant operations, enhance environmental clean up, reduce cost, enhance safety, and enable new missions to come to SRS. SRTC is more than an applied research and development laboratory in that it can follow a project from inception to plant operation and support.

Only about 45 percent of SRTC funding or \$62 million comes from DOE-SR. The balance comes from other DOE programs or government agencies. Dr. Deason reviewed the list of off-site customers for SRTC as well as the National Laboratory Partnerships and university collaborations. Approximately 770 people work at SRTC coming from diverse technical backgrounds. Most are engineers and chemists.

Dr. Deason emphasized that SRTC relies on collaborative input to define requirements and specifications focusing on both proven and newly developed technologies tailored for SRS and DOE Complex use. Dr. Deason reviewed various projects and programs SRTC is working on around the site. SRTC puts science to work by bridging the gap between science and solutions. Dr. Deason invited the CAB to tour SRTC when it is convenient.

Jimmy Mackey requested a copy of the book *Vadose Zone Science and Technology Solutions* written by SRTC scientists. In addition, Mr. Mackey stated the Environmental Restoration (ER) Committee is going to tour the Carolina Bays and suggested a tour of SRTC be combined at the same time. Mel Galin said the S&LTI Committee would like to see the integration of technical issues with the major activities that interest the CAB as well as better utilization of SRTC in addressing the technical issues. Mr. Galin also said a tour of the Ecology Lab is planned.

### National Environmental Policy Act (NEPA) Review Update

Drew Grainger, NEPA Compliance Officer, DOE, reviewed the Environmental Impact Statements (EISs) and the Environmental Assessments (EA).

There are five EISs. They are:

- SRS High-Level Waste Tank Closure (Final EIS expected in September 2001)
- SRS Salt Disposition Alternatives (Final EIS issued July 2001. Record of Decision (ROD) in preparation)
- Disposition of Scrap Metals from Radiological Areas (Draft EIS expected January 2002, Final EIS expected July 2002)
- Geologic Repository for Spent Nuclear Fuel (Final EIS expected December 2001. Site Recommendation Report expected in early 2002. License application at the end of 2003.)
- Amended Records of Decision
  - SRS Waste Management EIS, amended ROD June 28, 2001.
  - Interim Management of Nuclear Materials EIS, amended ROD in preparation for plutonium stabilization and Am/Cm stabilization

There are two EAs. They are:

- Alternate Approach for Defense Waste Processing Facility (DWPF) Canister Storage (Project cancelled, July 2001)
- Removal, Transportation, and Storage of Strontium 90 Thermoelectric Generators(Draft EA expected any time now. This EA is being prepared by DOE-Headquarters. SRS is the potential storage site)

There are two potential NEPA reviews in the works:

- EIS on a Modern Pit Facility (Advance Notice of Intent planned for after Critical Decision 0 in Fiscal Year 2002. Would be prepared by National Nuclear Security Administration (NNSA))
- EIS on Advanced Accelerator Applications Program / Accelerator Driven Test Facility (NEPA process would not begin until Fiscal Year 2002. EIS would be prepared by NNSA)

#### Long Term Stewardship (LTS) Workshop Trip Report

Wade Waters attended the fourth annual DOE sponsored workshop on long-term stewardship held in Grand Junction, Colo. Mr. Waters indicated this workshop was different from others he attended because DOE-Headquarters finally recognized that with the diversity of the DOE-Complex, each site needs to develop a LTS plan. It was stated that long-term stewardship should be between 50 and 100 years. Two issues have been previously overlooked: NIMBY – Not in my back yard, and NIMTOO – Not in my term of office. An effort would be made to clarify budget issues by separating clean up costs and stewardship costs. Idaho National Engineering and Environmental Laboratory (INEEL) has the lead for LTS for the DOE Complex. LTS now has congressional approval so LTS will be around for some time. Mr. Waters stated that the members of the workshop visited Rifle, Colo. that has a mill tailings site that has been closed. The granite marker had no warning signs indicating the material was dangerous or where to go for additional information. Mr. Waters also stated that deed restrictions have not worked in the past.

#### Environmental Restoration Committee

#### Monitored Natural Attenuation, Mixing Zone and L-Area Burning/Rubble Pit

Alice Stieve presented information about how SRS implements Monitored Natural Attenuation (MNA) and Mixing Zone (MZ) guidance for a specific Operable Unit (OU) at SRS. L-Area Burning/Rubble Pit and Rubble Pile has a small, low concentration carbon tetrachloride groundwater plume. The soil and groundwater are characterized and then modeled by SRS professional staff with the following steps:

1. Identify Contaminant Source Areas
2. Define Contaminant Plume
3. Measure Aquifer Characteristics
4. Evaluate data and hold review meeting with regulators to validate
5. Groundwater modeling

SRS then considers EPA (MNA) and SCDHEC (MZ) guidance to evaluate if MNA is a plausible remedy at the site:

- The source is under control (depleted or removed)
- Plume is confined to a shallow aquifer that is not used as a source of drinking water
- Plume is on the property and will remain on the property
- Contaminants are not dangerously toxic, mobile, nor persistent

The process is completed through an official document called the MZ application submitted to SCDHEC.

Ms. Stieve stated that during the characterization phase there are monitoring well samples, cone penetrometer samples and geologic samples taken and data recorded. Prior to groundwater modeling a hydrogeologic conceptual model is developed and used to build the model. The model predicts how the plume will move in the future. The model is also used to test various hypotheses such as source term and whether or not biological degradation is taking place. This is done with close interaction with the regulators, and using a standardized modeling process with widely used modeling codes and a report format familiar to all parties involved.

Ms. Stieve explained that a plume is a layer or zone of contamination in the groundwater that is influenced by groundwater movement and other conditions in the aquifer. A well is a small, open hole in the ground that penetrates the groundwater and the contaminant plume at a specific depth. Water samples can be taken periodically to monitor the movement of the plume. Monitoring is important for validating the mixing zone. Chuck Gorman stated that the State of South Carolina holds all water, groundwater and surface water, to drinking water standards regardless of location. The mixing zone concept allows the State some latitude relative to enforcement of the drinking water standard.

#### Response to Recommendation No. 140 on the Radioactive Waste Burial Ground (ORWBG)

Rod Rimando presented the DOE requested response to the CAB, which was required before October 22, 2001 in Rec. 140. Mr. Rimando pointed out that the recommendation has two parts:

1. The agencies review the Focus Group (FG) report and incorporate the remaining six findings in the remedial actions of the ORWBG.
2. SRS develop an implementation plan for the FG report recommendations and present the plan to the SRS CAB by October 22, 2001.

The FG report recommendations fall into one of two topic areas:

1. Source Unit (ORWBG) - which is the FG report recommendations 2, 3, 4, and 6.
2. Impacted Groundwater - FG report recommendations 5 and 7.

Mr. Rimando stated that the response to the Source Unit items are as follows:

#2 Active Institutional Controls (IC) are currently being implemented. Passive IC will be included in the ORWBG Record of Decision and Passive IC will be considered after groundwater corrective action (if required, IC will be included in the RCRA permit)

#3 As recommended, the solvent tanks will be stabilized as an interim remedial action.

#4 Minimizing erosion and maintaining integrity if the cover system will be key design features of the final remedy for ORWBG.

#6 The corrective measures study / feasibility study supports the recommendation that excavation of all waste, including plutonium, is not a viable remedial alternative.

Mr. Rimando stated that the response to the Impacted Groundwater items as follows:

#5 Because of the absence of other detected Constituents of Interest (COI) in the groundwater, tritium provides the best insight to understanding contaminant migration away from ORWBG.

Similar calculations were performed for VOC's and the results are consistent with earlier modeling. If and when other COI's are detected in the groundwater, SRS will re-examine the need for additional modeling.

#7 Mixing zones are reserved as an option in the RCRA permit. SRS will propose a mixing zone when groundwater seeps are below protection standards.

In conclusion, Mr. Rimando stated that the FG recommendations will be considered during the final remedial decision for ORWBG and as groundwater cleanup progresses. The Statement of Basis / Proposed Plan for final closure of ORWBG will provide another opportunity for public and stakeholder participation in the decision-making process.

Jimmy Mackey stated that the ORWBG focus group should be considered a model for focus groups across the DOE complex. He also noted that the ORWBG focus group information may benefit the upcoming Groundwater Workshop.

#### Annual Update on the F and H Groundwater Treatment Units (GTUs)

Ed McNamee stated that the pump and treat systems at both F and H areas have undergone some operational improvements in the last few years. Mr. McNamee noted that within the RCRA permit there are 42 constituents found in the water that are being treated. Mr. McNamee identified four major milestones that have been completed.

1. Operated both the F and H Area GTUs in compliance with the RCRA Permit conditions.
  - F Area GTU processes a nominal 7 million gallons of water per month
  - F Area GTU operating efficiency averages over 97%
  - F Area GTU processes a nominal 6 million gallons of water per month
  - F Area GTU operating efficiency averages over 98%
2. Submitted a Phase I Evaluation
  - The corrective action at F Area may capture as much as 200 of 560 curies of tritium per year that are released to Fourmile Branch
  - The corrective action at H Area may capture as much as 100 of 140 curies of tritium per year that are released to Fourmile Branch
  - The majority of the curies of tritium captured are from a few wells
  - Upgradient injection plus natural recharge results in a constantly degrading capture efficiency
3. Worked with SCDHEC to modify the Phase II permit conditions
  - Evaluate the performance of Phase I
  - Within 5 years, reduce the mass flux of tritium from both F&H to Fourmile Branch by 70% and other constituents to Groundwater Protection Standards (GWPS)
  - Before 2010, reduce the discharge of the other constituents at the seep line to less GWPS
  - Evaluate Phase II Corrective Action
  - Submit a Phase II Corrective Action Plan
4. Submitted the Phase II the Corrective Action Plan (CAP)
  - Maximize tritium capture rate through precision pumping
  - Reduce the complexity of operations and waste generation by eliminating the dissolution of aluminum in the geological formation through in situ pH adjustment (resulting in restoring the formation to a more natural pH)
  - Reduce the impact of injection on the capture of the system by dispositioning a portion of the treated water by phytoremediation

In conclusion, Mr. McNamee announced the following plans for fiscal year 2002:

1. Perform packer and cone penetrometer test (CPT) evaluations to determine the optimum position for the extraction wells
2. Begin implementation of base injection at the F-Area GTU
3. Complete the installation of surface water monitoring and flow stations

Perry Holcomb stated that modifying the pH of the water might cause more harm than good. Mr. Holcomb asked if ammonia had been considered as an adjuster. Mr. McNamee responded yes. Mel Galin stated that from his perspective it looked as though each solution would create more problems in the future.

#### Integrator Operable Units – Update

Thomas Johnson explained the Integrator Operable Unit is a process by which water samples taken in streams that detect contaminants can be traced to specific operable units on the SRS. Mr. Johnson stated that there are six Integrator Operable Units:

1. Steel Creek
2. Savannah River Flood Plain Swamp
3. Fourmile Branch
4. Pen Branch
5. Lower Three Runs
6. Upper Three Runs

Mr. Johnson explained the three phases of the IOU program:

Phase I- Develop a workplan

Phase II- Collect and evaluate data; Early actions at OU if required based on data evaluation; IOU workplan update

Phase III- IOU Remedial Investigation/Feasibility Study Documentation; Final IOU Remedial Action

Mr. Johnson then provided a status of the following six IOU's workplans:

1. Steel Creek Workplan
  - Rev. 1 approved
  - Copies provided to CAB ER Committee and Reading Rooms
  - Sampling completed
  - In the data evaluation / periodic report development phase – January of 2002 submittal
2. Savannah River / Swamp Workplan
  - Rev. 0 submitted
  - Copies provided to CAB ER Committee and Reading Rooms
  - In comment resolution phase
  - Sampling completed
3. Fourmile Branch Workplan
  - Rev. 0 submitted
  - Copies provided to CAB ER Committee and Reading Rooms
  - In comment resolution phase
  - Sampling completed
4. Lower Three Runs IOU Workplan
  - Rev. 0 submitted
  - Copies provided to CAB ER Committee and Reading Rooms
  - In EPA and SCDHEC review phase

- Comments due October 31, 2001
- 5. Pen Branch (no report)
- 6. Upper Three Runs (no report)

Mr. Johnson also discussed the following Early Actions:

#### Based on the Evaluation of Sediment and Soil Data

- Current access controls will be maintained and monitored for constituents that exceed human health and ecological benchmark values in the IOU's will continue
- Additional signs and / or fencing were installed on SRS at the public road crossings of the IOU's
- The privately owned Creek Plantation swamp section of the Savannah River swamp will be posted "No Hunting, No Fishing and No Unauthorized Access" and patrolled by SRS upon agreement between the Creek Plantation swamp property owner and SRS

#### Based on Conceptual Site Model Evaluation

- L-Area, P-Area, and Burial Ground Area groundwater OU's RFI/RI schedules were reprioritized
- Dunbarton railroad yard OU was added to the Site Evaluation Program

#### Based on the Evaluation of Fish Data

- To ensure that all potentially affected populations are educated about the potential risk from consuming fish, the four agencies are working together on fish consumption communication for the SRS stretch of the Savannah River
- The EPA, SCDHEC, GaDNR, DOE Fish Consumption Communication Plan includes
  - revised Fish Fact Sheet
  - three public workshops
  - wide distribution of Fish Fact Sheet & workshop announcements

#### Based on the Evaluation of Game Data

- Radiological monitoring of game harvested on the SRS will be continued
- SRS is currently developing a "deer white paper" to document the comparison of SRS to Non SRS deer (preliminary results indicate that deer from SRS compare to deer from other like areas)

In conclusion, Mr. Johnson stated that as the IOU program continues that the CAB ER Committee and will be kept appraised.

#### Nuclear Materials Committee

Jean Sulc, CAB member, opened the Nuclear Materials Committee portion of the Combined Committee meeting with discussion on the recent stand by the Governor of South Carolina to stop shipments of plutonium from Rocky Flats to the Savannah River Site. The apparent concern is that there is no solid disposition path out for the plutonium. She pointed out that although the material is intended for the mixed oxide program, the CAB should be prepared to look at the storage of the material, which does fall within Environmental Management.

Sulc also mentioned that the CAB chair, Karen Patterson, had been talking with the chair of the Rocky Flats board about developing a joint letter on shipments of plutonium. Sulc said the draft letter would likely be available for the SRS CAB to review when Patterson returns from the quarterly SSAB meeting. Jimmy Mackey said a letter should not be sent until the Governor meets with DOE.

### Americium/Curium Program Update

Sachiko McAlhany, Americium/Curium Program Manager, DOE Material and Facility Stabilization, provided an update on the americium/curium stabilization project. McAlhany said the presentation would detail base operations in F Canyon, the systems engineering approach used by WSRC to evaluate the americium/curium stabilization options, the recommended disposition option of sending the material to the Defense Waste Processing Facility (DWPF), the safety strategy to send the material through the canyon to DWPF and how SRS would handle potential situations that could arise.

In current normal canyon operations, material is transferred from F-Canyon underground through diversion boxes to the tank identified to receive the waste in F-Tank Farm. In inter-area transfers, material is sent from F-Tank Farm to H Tank Farm. As waste tanks are deinventoried to prepare for vitrification through DWPF, the material is sent from the waste tank to one of the two DWPF feed tanks, Tank 40 or 51, in the Extended Sludge Processing. The current transfers are being sent from Tank 8 in F-Tank Farm to Tank 40 in Extended Sludge Processing and will make up the sludge batch 2 feed for DWPF. These inter-area transfers are conducted monthly.

Because costs of vitrifying americium/curium in the Multi Purpose Plutonium Facility (MPPF) started to increase drastically and DOE made a decision to declare the material excess, McAlhany said DOE decided to relook at an option of sending the material through the HLW to DWPF. WSRC was tasked to evaluate the options for Am/Cm and to do so, a systems engineering approach was used. Evaluation criteria and the weighting factors included scope (20%), integrated safety (35%), schedule (35%) and cost (10%).

The higher weighted factors, safety and schedule, included radiation protection and environmental impacts, Defense Nuclear Facilities Safety Board requirements and program resources. Scope listed elements included the ability to absorb current and future missions. After using the systems engineering approach, WSRC recommended that DOE stabilize the Am/Cm through the HLW system because the option is safe, cost efficient, similar to base operations, rapidly reduces Am/Cm risk, improves HLW infrastructure and supports site missions.

McAlhany then described the activities that would occur on the nuclear materials side and on the HLW side. The Am/Cm will be neutralized and diluted, then transferred directly to the DWPF feed tank into sludge batch 3. The end state of the material will be similar to the end state of the MPPF project but the process would be more cost effective. To conduct this transfer, however, McAlhany said some modifications in the HLW would be required, for example, a waste header backup will be needed.

The cost estimate to transfer the material is \$24 million to \$33 ½ million. Although the endstate would be similar, the Am/Cm would not be recoverable. The time estimate is for 10 batches at one-week transfers to take place over a four-month period to prepare the material within the Canyon, and then approximately 4 days to one week to transfer the material from F-Canyon to the DWPF feed tank.

To accomplish the transfer, F canyon will use the safety approach identified for the existing F Canyon vitrification process. The existing HLW authorization limits bound the proposed Am/Cm

transfer and the HLW strategy prepares the sludge batches and aligns the waste acceptance criteria for the facilities.

McAlhany said DOE and WSRC are prepared to address the following contingencies:

If solubility tests higher than anticipated, a chemical strike in F Canyon will be conducted to precipitate the soluble portion or Am/Cm will be transferred after the sludge batch is washed. If the settling time is too great, Am/Cm will be transferred after the sludge batch is washed.

McAlhany concluded by stating that WSRC presented a package to DOE on August 16 recommending to cancel the MPPF vitrification project and proceed with stabilization/disposition through the HLW system. The decision to cancel the MPPF project and move forward with the HLW option will be made after DOE gives presentations to the DNFSB and the Energy Systems Acquisition Advisory Board (ESSAB). A presentation to the ESAAB is set for September 18.

Jimmy Mackey asked if the Am/Cm work will affect the progress of DWPF and its required 250 canisters per year. McAlhany said it would take only about 10 canisters to stabilize the material. Other questions focused on the ability of the evaporator to handle the material and if changes in the HLW system will support current and future missions. McAlhany said future site batches would have similar material content and that some of the mixed oxide streams could also go through the HLW system.

Perry Holcomb asked if the \$24-33 million included costs of putting the material in the DWPF glass logs. McAlhany said those costs were additional and would be about \$1 million per canister (with 10 canisters as the expected product). McAlhany said the Am/Cm stabilization project is currently funded but if suspended, as DOE-SR will likely recommend, the money will go to the HLW project. Any additional costs on the Tank Farm and DWPF side will be minimal compared to annual costs of current HLW operations, she added.

*For handouts from this meeting, please call 1-800-249-8155.*