



## **SRS Citizens Advisory Board**

### **Old Rad Waste Burial Ground Focus Group**

#### **Meeting Record**

March 17, 1999  
Aiken Federal Building  
Aiken, S.C.

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The Citizens Advisory Board (CAB) Environmental Remediation and Waste Management (ER&WM) Subcommittee Old Radioactive Waste Burial Ground (ORWBG) Focus Group met on Wednesday, March 17, 1999, 1:00 p.m., at the Aiken Federal Building, Aiken, S.C. The purpose of the meeting was to receive a status update on the four task teams, receive a presentation on the Feasibility Study and review the path forward. Those in attendance were:

#### **CAB Members**

Karen Patterson, Admin. Lead

#### **Stakeholders**

Lee Poe, Technical Lead

#### **DOE/Contractors**

Brian Hennessey, DOE

Julie Corkran, EPA

Tom Rehder, WSRC

Ken Feeley, EPA

Kevin Brewer, BSRI

JoCherie Overchash, DHEC

Ed McNamee, BSRI

Michael Moore, DHEC

John Bennett, BSRI

Julie Elam, DHEC

Mike Griffith, WSRC

Keehna Frasier, DHEC

Joe Price, WSRC

Mihir Mehta, DHEC

Don Toddings, BSRI

Jerry Devitt

Elmer Wilhite, WSRC

Bill McDonell

Paul Bertsch, UGA/SREL

William Willoughby II

Jim Ccook, WSRC

Gene Rollins

Sonny Goldston, BNFL

Jim Moore, WSRC

Damick, SAIC

Karen Patterson, Administrative Lead, welcomed those in attendance and asked each of them to introduce themselves. Ms. Patterson reviewed the agenda and it was decided that she would make the first presentation on Task Team #6.

Ms. Patterson stated that Task Team #6 members were Ann Loadholt, William Willoughby II, Ken Goad, Brian Hennessey and Sonny Goldston. The purpose of the team was to develop and document assumptions that should be used by the Focus Group on land use and what timing assumptions should be used when calculating Old Burial Ground (OBG) and H-Seepage Basin consequences to future populations.

The recommended assumptions developed by the Focus Group on land use and timing were presented as follows:

- Since institutional controls can not be relied on beyond 100 years after transfer of control of the disposal facility from operator to owner:
  - SRS will be processing waste at least through 2038.
  - Institutional controls will remain in place at least until 2138.
- Through the end of institutional control, remedies to the ORWBG need to be protective of an exposed individual at the mouth of Fourmile Branch.
- The exposed individual was characterized as a recreational fisherperson.
- Through the end of institutional controls, protection of intruders should not drive decisions.
- 500 years after the end of institutional controls, remedies sufficient to protect a recreational user on the surface of the burial ground would be adequate.
- Recreational use was described as a hunter who camps on the burial ground for two weeks a year, but does not consume food or water from the site.
- The scenario seems unreasonable for protecting a hypothetical subsistence farmer who digs into the burial ground, eats food grown on the burial ground and drinks water for the aquifer beneath the burial ground during this time frame.
- Remedies selected so that concentrations of contaminants are not large enough to exceed the drinking water limit at Fourmile Branch or Upper Three Runs and Road C.
- If seepage is determined to be the point of compliance, a reasonable pathway to humans should be used to determine risk.
- A reasonable human pathway would be from deer/pigs drinking at the seep to a recreational hunter who ate them. Dose to man should not exceed the current permissible dose (100 mrem/yr).
- The scenario of a person getting all his drinking water from the seep is not reasonable.
- Remedies should ensure that a person drinking water from Upper Three Runs or Fourmile Branch at Road C after the loss of institutional controls would not incur a dose greater than 30 mrem/yr for radionuclides or greater than the drinking water limits for organics and metals.

Questions/comments raised from this discussion were as follows:

- Could the population move onto the site earlier than 2138 and could they move closer to the burial ground?
- A review of dates was as follows:
  - 2038 – Site closes and everything is done
  - 2138 – Fisherman at 100 millirem (total) and no one lives on the burial ground
  - 2638 – Someone could live on the burial ground
- There was discussion on the risk of a person taking a sample as well as an individual drinking the water and eating a deer.

Jerry Devitt, Task Team #1 lead, stated that the purpose of his Task Team was to determine limits for each COI identified for the burial ground. The team member is Todd Crawford. Mr. Devitt stated that he was still working on getting the information. He gave a brief description of the history of how limits were developed in years past. He stated that the Occupational Safety and Health Act (OSHA) was initiated in 1970 and the Environmental Protection Agency (EPA) was initiated in 1972. Before that, there was not scientific data available to develop standards based on science. Therefore, standards developed had little basis in hard facts. He stated that OSHA took those numbers and made laws. The numbers used were very conservative.

Questions/comments raised from this discussion were as follows:

- Julie Corkran, EPA, offered to have John Richards from EPA to discuss with the group the drinking water standards.

Lee Poe, Task Team #3 lead, stated that the purpose of his Task Team was to determine the inventories for the Old Burial Ground (OBG) and the H-Area Seepage Basins and also to list the assumptions and uncertainties. The team members are Rod Rimando, DOE and Elmer Wilhite, WSRC. He stated that Rod Rimando was to present the OBG inventory but Rod was unable to make the meeting and would report at a later date. Mr. Poe will present the H-Seepage Basin inventory and Elmer Wilhite will present the groundwater flow paths.

Mr. Poe stated the H-Seepage basin was located on 15.5 acres south-west of H-Area and received approximately 80 million gallons of liquid wastes from H-Canyons from 1955 to 1988. The basins were closed in 1989. The groundwater was contaminated with tritium, radioactive metals, nitrates, and some toxic heavy metals. Groundwater remediation was initiated in 1997 and the operational efficiency improved in February 1999. Mr. Poe showed maps of the area and the contamination. A listing of the discharges to the basins was reviewed with the primary constituents being Nitrates at 1,000,000 Kg, Sodium at 140,000 Kg, Mercury at 1,800 Kg. Tritium was recorded at 150,000 Ci. Mr. Poe stated that one-half of the total migrated from H-Area, the site had released 165,000 Ci of tritium to the river. The standard extraction procedure (EP) tests performed in 1993 concluded that, "Neither basin water nor bottom sludge exhibit EP-toxicity nor characteristic of hazardous wastes." Only chromium and mercury were above detectable limits. Mr. Poe reviewed the seepage basin closure cap cross-section. Mr. Poe stated that less than 1 Ci of tritium remains in the burial ground, the rest has been purged. That 1 Ci reduced from 150,000 Ci is a small thorn in the side of the OBG.

Elmer Wilhite, SRTC, reviewed the groundwater flow with flow paths and rates consistent with past studies. The groundwater flow and transport model simulated the flow of one water particle with the location marked for each ten year time period. While this was stated to be new work, it was mentioned that the flow maps with out the ten year locations marked were published in the document, "Impact of F&H Area Pump Treat Re-inject Remediation Systems on Old Radioactive Waste Burial Ground," SRT-EST-98-154. Mr. Wilhite stated there was concern about the confidence of the groundwater divide. The flow maps suggested the effectiveness of the groundwater divide. Several maps were displayed showing the groundwater flow directions in Upper Three Runs aquifer unit, "upper Zone" with pumping and without pumping. It was concluded that the focus group had to be concerned about both the burial ground and H-area flow. Bill McDonnell stated that the maps imply the remediation action was going to increase the contaminates in Fourmile Creek. Mr. Wilhite said that was correct, there would be more contaminates, but the remediation would cause the contaminates a longer time to get to the creek.

Ms. Patterson introduced Mike Griffith to give a presentation on the Feasibility Study. Mr. Griffith handed out copies of his presentation as well as the ORWBG Focus Group Document Map and the Executive Summary of the Feasibility Study which was titled, "Corrective Measures Study/Feasibility Study for the Old Radioactive Waste Burial Ground, 643-E (U)", WSRC-RP-98-4012, Rev. O dated March 1999. The ORWBG Focus Group Document Map defined the location of the specific tasks in the Feasibility Study. Mr. Griffith stated that while the document wasn't perfect, it was a very good document. Public input from the public workshops was included in the document that also supports many of the tasks identified by the focus group. Key concepts included implementation of systematic and defensible evaluation of technologies, treatment alternatives and combined engineering and institutional controls as appropriate. It recognized that in some areas treatment or removal alternatives for principal threat wastes may not be possible. Mr. Griffith reviewed two charts that broke down the sections of the Feasibility Study with key items contained in each section, section numbers and task team numbers identified. Mr. Griffith's team was complimented on the amount of effort that went into these charts as well as the benefit to the focus group. The families of nine alternatives were listed. Each family included alternatives that deal with the associated mercury and radioactive hot spots. The Old Solvent Tank remedial alternatives were also included. In each of these cases, the No Further

Action alternative was considered.

The path forward for the Feasibility Study is as follows:

March 1999 – Complete and submit to SCDHEC and EPA  
August 1999 – Receive Approval  
December 1999 – Statement of Basis/Proposed Plan Approval  
October – January 2000 – Public comment period  
June 2000 – Record of Decision Approval.

Mr. Griffith stated that there were still some issues which included the following:

- Institutional control period – Still needed to be defined and agreed too.
- Time Frame for Implementation of Remedial Actions
- Groundwater Modeling Results – With a lot of the contaminate already in the vadose zone and groundwater, need to define the actual impact of the different scenarios. There was discussion on the type containers in which the contaminants may be stored.
- Removal and Disposal of Transuranic (TRU) Waste – Should they leave TRU waste where it is in the burial ground? This needs to be discussed with SCDHEC and EPA. It was noted that WIPP will not take CERCLA waste.

Mr. Griffith stated that if there were any questions, they could contact himself or Rod Rimando, DOE.

Ms. Patterson asked Gene Rollins, lead of Task Team #5, to give the status of his team. Mr. Rollins stated the purpose of their team was to develop the methodology the focus group should use to determine the contaminants of interest transport through the unsaturated zone and then transport through the saturated zone to the creek, then transport and mixing with other creek and river waters to the water users. Mr. Rollins stated that he had read over Appendix C. He said that their task team would need to take the data from Appendix C and cover over the whole seepage basin to come up with the correct concentrations. The data was not in the correct form to complete that task. He said they would have to come up with more realistic concentrations levels instead of the peak concentrations in Appendix C. Mr. Rollins stated that with the data given, he felt with some work, the data could be developed.

Ms. Patterson stated that the teams had not yet come to closure on their tasks. She suggested that they continue to work and report their status at the next meeting. She also suggested that the balance of the tasks be placed on hold while the members of the task teams review the Feasibility Study and get their comments back to Mike Griffith.

After some discussion, it was decided the next Focus Group meeting would be on April 14, at 1:00 p.m. (Note: The Aiken Federal Building has been scheduled for that meeting.)

With no further comment, Ms. Patterson adjourned the meeting.

***Meeting handouts may be obtained by calling 1-800-249-8155.***