



SRS Citizens Advisory Board

**Facilities Disposition and Site Remediation
Committee Meeting**

Aiken Municipal Conference Center

July 18, 2006

The Savannah River Site (SRS) Citizens Advisory Board (CAB) Facilities Disposition and Site Remediation Committee (FD&SR) met on Tuesday, July 18, 2006, 5:00 PM, at the Aiken Municipal Conference Center, Aiken, SC. The purpose of this meeting is to review and discuss the SRS P-Area Modeling Program; Proposed Plan for A-Area Burning Rubble Pits, Misc. Chemical Basin and Metals Burning Pit Operable Unit; and the Proposed Plan for the M-Area Inactive Process Sewer Lines Operable Unit; and receive public comments. Attendance was as follows:

CAB Members

-Leon Chavous
-Cynthia Gilliard
- Wendell Lyon
- Mary Drye
Manuel Bettencourt
Tracey Carroll
Gerry Devitt
Jimmy Mackey

- *FD&SR committee members*

Stakeholders

Jack Roberts
Todd Crawford
Perry Holcomb
Murray Riley
* Rick McLeod

Regulators

Ted Millings, SCDHEC
Chuck Gorman, SCDHEC
Turpin Ballard, EPA

* *CAB technical advisor*

DOE/Contractors

Ed McNamee, BSRI
de'Lisa Bratcher, DOE
Wade Whitaker, DOE
Helen Belencan, DOE
Paul Sauerborn, WSRC
Mary Flora, WSRC
Karen Adams, DOE
Rita Stubblefield, DOE
Kevin Brewer, BSRI
Joao Cordoso, BSRI
Roger White, WSRC
Pat Nakagawa, BSRI
Bruce Schappell, BSRI
Bob Hiergesell, SRNL
Chris Bergren, BSRI

Welcome and Introduction:

Mary Drye, Chair, welcomed those in attendance and asked that they introduce themselves.

P-Reactor Closure Tier 1 Screening: Rita Stubblefield stated that the reason for this presentation is from Recommendation 233 which stated that the three parties (DOE, EPA and SCDHEC) continue to inform the public of all modeling activities associated with P-Reactor. Ms. Stubblefield pointed out the goals of the presentation are to describe how modeling can help determine an acceptable end state for the P-Area Reactor; Describe how the model works; and Discuss parameters that will be put into the model. The presentation will identify P-Area location, give a description of the tiered approach to modeling; calculations, principles and input parameters.

Dr. Kevin Brewer stated that a two-tiered approach will be used in determining an acceptable end state for the reactor facilities with respect to subsurface contaminant migration. The two-tiers will include screening (direct facility characterization and eliminate constituents) and a Performance Assessment (demonstrate reasonable expectation). The Performance Assessment consists of a two staged calculation which looks at zone of mixing/dilution (same as EPA soil screening guidance) and vadose zone (same as EPA soil screening guidance and continuous source and mass limited). Dr. Brewer stated the next step is to compare maximum concentration /inventory (process knowledge and known inventory); determine the constituents of concern and their respective limits; determine additional characterization needs; and present the findings in late July to the Core Team.

Dr. Brewer stated the tier 1 screening principles are to calculate the maximum concentration/inventory; Use conservative assumptions for transport, partitioning, and source configuration and to look at data needs geometries/configurations and contaminant and material properties. Dr. Brewer identified other considerations as the following:

- Dose vs. MCL
 - MCL is used; dose is not considered
- Daughter products
 - No daughter product effects are considered
- Non-groundwater pathways
 - Only groundwater (MCL) is considered

- Changing containment properties
 - Constant properties in time and space
- Source leaching
 - No vadose zone transport (only partitioning)
 - Complete contaminant failure at specified time

Manuel Bettencourt asked if the second Tier calculation is a true Performance Assessment. Dr. Brewer stated that current Soil and Groundwater modeling is not exactly the same but has many similarities – and the exact approach for the Tier-2 calculations have yet to be decided. Jimmy Mackey asked if the screening used any information from similar sites in the DOE complex. Dr. Brewer stated that this screening is unique and specific to SRS reactors only. Mr. Holcomb asked if the solids/colloidal component of the groundwater samples were counted along with the true liquid phase. Dr. Brewer stated that the sampling would follow EPA protocols. Jack Roberts asked if it is reasonable for the point of compliance of 0 feet from the building realistic. Dr. Brewer stated that 0 feet was used for purposes of a conservative estimate and screening, the ultimate point of compliance may move out and away from the facility. Todd Crawford asked how activity products are calculated. Dr. Brewer stated that the process assumes all materials are in soil-equivalent form and can instantaneously leach at the assumed time of containment failure.

Proposed Plan for the ABRP/MCB/MBP Operable Unit: Karen Adams stated the objective of the presentation is to facilitate public involvement in the A-Area Burning/Rubble Pits and the Miscellaneous Chemical Basin/ Metals Burning Pit Operable Unit (ABRP/MCB/MBP OU) Proposed Plan (PP). The public comment period will conclude July 29, 2006. Ms. Adams identified the sampling strategy as the following:

- Aerial photography analysis and field surveys were performed as part of the investigation
- Characterization included both soil and groundwater investigations, and it was performed in multiple phases
- Sample analysis included Target Analyte List (TAL) inorganic, Target Compound List (TCL) volatiles, Semi-Volatile Organic Compounds (SVOCs), pesticides, polychlorinated biphenyls (PCB), and the indicator parameters gross alpha and non-volatile beta. If radiological constituents exceeded threshold values (20/50 pCi/g gross alpha / nonvolatile beta), specific radio isotopic analysis was performed

Ms. Adams stated that upon the review of the sampling of the nine subunits identified below, only 2 subunits required action:

Subunit 1: Depressional Area – No action required

Subunit 2: Potential Pit – No action required

Subunit 3: Ash Scatter Area / Ditch – No action required

Subunit 4: 731-A and 731-1A Burning / Rubble Pits – No action required

Subunit 5: 731-2A Rubble Pit – Action has been completed

Subunit 6: Metals Burning Pits, 731-5A – Action has been completed

Subunit 7: Miscellaneous Chemical Basin, 731-4A – Surface soils action is complete; vadose zone final action (passive soil vapor extraction phase) ongoing

Subunit 8: trench (buried beneath ash pile) – Action proposed as expansion of the interim remedial action SVE well network estimated at \$2,600,000

Subunit 9: 788-2A A-Area Ash Pile – Action proposed involves a soil cover and institutional controls estimated at \$1,500,000

Ms. Adams concluded that the proposed actions for the Subunit 8 and 9 are the preferred options and both alternatives are protective of human health and the environment, which comply with Applicable or Relevant and Appropriate Requirements (ARARs); are cost effective; and satisfy statutory requirement to utilize permanent solutions and alternative treatment technologies or resource recovery to the maximum extent practicable. The Record of Decision is scheduled for January 2007, and Remedial Action Start in May of 2008.

Jack Roberts asked if the groundwater would be addressed in this proposed plan. Ms. Adams stated that groundwater will not be addressed under this proposed plan; however, it will be handled as a separate RCRA cleanup action.

Proposed Plan for the MIPS� Operable Unit: Rita Stubblefield stated the meeting objective was to facilitate public involvement in the Proposed Plan for the M-Area Inactive Process Sewer Line (MIPS�) Operable Unit (OU) at the SRS. The public comment period will conclude July 29, 2006. The operable unit is located in the northwest corner of SRS. Ms. Stubblefield identified the components of the operable unit as the following:

- Portions of the MIPS� to Manhole 1, including the southern portion of the 313-M Inactive Clay Process Sewer Lines to Tims Branch

- Portions of the 320-M Inactive Clay Process Sewer Lines from the building slab out to the former security fence, passing through Manholes 3A, 2A, 1N, 1A and 1
- The segments of pipeline starting adjacent of the 322-M building slab (starting just south of the sewer line between 322-M and Manhole 6A) and extending to the A-014 Outfall, passing through Manholes 8, 9, 10, 11, 12, 13 and 14

The Sampling strategy consisted of inspection of the manholes; soil-gas sampling 50' apart and if above threshold limit additional sampling would be conducted. Ms. Stubblefield stated the following regarding the sampling and analysis plan:

- Manholes were opened and visually inspected
- Shallow soil-gas samples were collected approximately 50' apart along those sections of pipe not previously investigated or that had no feeder line tie-ins. Results were used to establish soil sample locations (where soil-gas VOCs, specifically tetrachloroethylene (PCE) and trichloroethylene (PCE) where concentrations exceeded 5,000 part per billion by volume (ppbv)
- Soil sample stations were established adjacent to manholes, junctions of feeder lines with the main sewer pipe, and at locations where total soil-gas VOC (TCE and PCE) concentrations exceeded 5000 ppbv. Samples were collected from 0-2, 3-5, 8-10, and 18-20 foot intervals below the base of the pipe
- Soil samples were analyzed for VOCs, gross alpha, non-volatile beta, and target analyte list of inorganic constituents including mercury and total uranium

Ms. Stubblefield addressed the results as no surface contamination (no human health or ecological risk identified); No radiological contamination encountered within the pipeline or in adjacent soils; and VOCs, specifically TCE and PCE, are present in the soils adjacent to the pipeline at concentrations that represent a threat to groundwater at four discrete locations with the remedial goal objectives based upon contaminant migration. Ms. Stubblefield addressed a new remedy component of alternatives S-2, S-6, and S-7 because in some instances the VOCs are trapped in the low permeability soils of the Upland Unit. Soil fracturing uses a mixture of sand and a viscous fluid which is injected at high pressure to create sand-filled fractures, thus enhancing the permeability of the formation. The test pilot adjacent to 320-M showed that fracturing in the Upland Unit increased flow rate and VOC mass removal by at least one order of magnitude over soil vapor extraction alone.

Ms. Stubblefield stated the preferred remedial alternative found in the proposed plan is phased soil vapor extraction enhanced with soil fracturing, and institutional controls. The Record of Decision is scheduled for January of 2007 and Remedial Action starts in July of 2007.

Perry Holcomb asked as to the size of the source of the contamination. Gerald Blount stated the contaminated soil is 20-30 feet thick and 50-75 feet in diameter. Rick McLeod asked if soil fracturing technology would be deployed to other sites at SRS. Ms. Stubblefield stated this is the first deployment of this technology at SRS and will be deployed at other locations at SRS where applicable in future deployments. M. McLeod asked if this operable unit was close to the SRS boundary. Ms. Stubblefield stated that the OU was close to the SRS boundary. Jack Roberts asked how much contamination was in the ground at this OU. Gerald Blount stated that there is approximately 120 gallons of contamination.

Public Comment: None

Adjourn:

Mary Drye adjourned the meeting at 7:00 P.M.