SRS Citizen's Advisory Board

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Facilities Disposition and Site Remediation

Committee Meeting

Aiken Municipal Conference Center

September 19, 2006

The Savannah River Site (SRS) Citizens Advisory Board (CAB) Facilities Disposition and Site Remediation Committee (FD&SR) met on Tuesday, September 19, 2006, 5:00 PM, at the Aiken Municipal Conference Center, Aiken, SC. The purpose of this meeting is to review and discuss the SRS Environmental Report for 2005 and the SRS Integrator Operable Unit Program; and receive public comments. Attendance was as follows:

CAB Members
-Leon Chavous
-Cynthia Gilliard
- Wendell Lyon
- Mary Drye
Manuel Bettencourt
-Alex Williams
Joe Ortaldo

Stakeholders
Jack Roberts
Murray Riley
Russ Messick
Franklin Boulineau
Liz Goodson

Regulators
Ted Millings, SCDHEC
Don Siron, SCDHEC
Rob Pope, EPA
Jim Barksdale, EPA
Greg Simones, SCDHEC

DOE/Contractors
Chris Bergren, BSRI
de'Lisa Bratcher, DOE
Wade Whitaker, DOE
Ron Socha, WSRC
Paul Sauerborn, WSRC
Mary Flora, WSRC
Susan Dyer, WSRC
Pete Fledderman, WSRC
Bob Haegersell, SRNL
Brian Hennessey, DOE
Gail R. Whitney, DOE
Gerald McLane, BSRI

- FD&SR committee members

** CAB technical advisor*

Welcome and Introduction:

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

SRS Environmental Report for 2005: Pete Fledderman stated the purpose for the presentation and discussion of the SRS site environmental report results are in response to a CAB request. Mr. Fledderman explained that the environmental monitoring program started back in 1951-1952 with baseline studies by DuPont and the US Department of Health, Education and Welfare. In addition, the Academy of Natural Science of Philadelphia conducted work in 1951; subsequently, the formal Environmental Monitoring Program started in 1953.

Mr. Fledderman stated that the purpose of Environmental Monitoring program is to:

- Characterize and quantify contaminants
- Demonstrate compliance with applicable standards
- Calculate radiation exposures to the public
- Assess the effects, if any, on the local environment

The program requirements come from State and Federal Regulations, DOE Orders, and Best Management Practices. Mr. Fledderman provided a definition of the difference between effluent monitoring and environmental surveillance. Effluent monitoring is the collection of samples or data from the point at which a facility discharges water or air to the environment; environmental surveillance is the collection of samples of air, water, soil, food products, biota, and other media – or of data – from the ambient environment.

Mr. Fledderman stated that the surveillance program design consisted of analyte selection (process knowledge, movement through the environment and health impacts) and sample location selection (exposure pathways). The types of surveillance samples are ambient air, rainwater, surface water, drinking water, food products, deer and hogs, fish/shellfish, soil, sediment, vegetation, and groundwater. The 2005 monitoring results summary consists of the following:

- Dose summary
- Radiological air: releases, doses, and highlights
- Radiological water: releases, doses, and highlights
- Nonradiological monitoring results and highlights

In 2005 over 10,000 samples and 30,000 analyses were performed; SRS 2005 air and water releases, as well as all potential radiation doses from the site, were well below applicable regulatory standards; and potential doses are calculated for the pathway (air or water) for the Maximally Exposed Individual. Mr. Fledderman noted that the air pathway highlights were as follows:

- Tritium was the only nuclide regularly detected in air beyond the site boundary
- Tritium concentrations followed the expected "bull-eye" pattern

Water pathway highlights were as follows:

- Tritium was the only manmade nuclide regularly detected in the water in the Savannah River
- Tritium and Cesium -137 were the manmade radionuclides regularly detected in Savannah River fish.

The 2005 Dose Summary is as follows:

DOE All-Pathway	Standard 100 mrem	SRS Dose 0.13
EPA Clean Air Act	Standard 10 mrem	SRS Dose 0.05
EPA Drinking Water	Standard 4 mrem	SRS Dose 0.03

The 2005 Special Case Doses are as follows:

Fish – 0.24 mrem (maximum, Steel Creek bass)

Deer and Hog – 8.8 mrem (maximum onsite hunter)

5.4 mrem (maximum offsite deer hunter)

2.8 mrem (maximum offsite hog hunter)

The compliance status is as follows:

- Clean air act
    - Compliance rate of 100 percent
    - No notices of violation
- Clean water act
    - NPDES compliance rate of 99.97 percent
    - No notices of violation
    - One exceedance (TSS at A-11) in 3,493 analyses

Mr. Fledderman identified the nonradiological surveillance. The water surveillance results show that average concentrations at all river and stream sites are less than EPA's drinking water standard. Regarding mercury in fish the highest concentrations are in preditors (bass, bream, catfish) with levels similar above and below SRS along the Savannah River. The Academy of Natural Science of Philadelphia (ANSP) states that long-term trends indicate that overall stream and river water quality below SRS is higher that above the plant. Mr. Fledderman noted that both WSRC and ANSP monitoring have shown that site operations have not had any adverse impact on the water quality of SRS streams and the Savannah River.

In closing, Mr. Fledderman made three important comments"

- SRS has a comprehensive environmental monitoring program
- The site's airborne and liquid releases to the environment continue to decline
- For 2005, the radiation dose to the public living near SRS is well below DOE's 100 – mrem/year standard; and downriver water consumer is well below EPA's 4-mrem/year standard

Questions raised by the public are as follows:

Jack Roberts asked if the mercury found in the fish was totally from the SRS. Mr. Fledderman stated that there was only a small amount of the total from SRS. Mary Drye asked if gender was taken into consideration when allowable doses are calculated. Mr. Fledderman stated that allowable dose is calculated using an average height and weight individual and did not differentiate between male or female.

Implementation of an SRS Game Animal Administrative Dose Release Limit: Mr. Fledderman stated that in 2006 the SRS game animal administrative limit will be 30 mrem/year. This limit is will be consistent with Doe-HQ guidance when issued, ensures game animals only attribute a maximum of 30% of the total allowable public dose, and the site has revised the hunter dose database. Mr. Fledderman offered the hunt impacts as being a slightly greater chance hunters who kill multiple or larger animals may exceed limit (however will still be able to keep the head and rack), in addition there will be an updated survey card with an option to receive dose information as well as a request for the amount of meat consumed from the SRS hunt.

Mr. Fledderman stated the notification to hunters and the public were made through the following:

- Prospective hunters
- EPA, SCDHEC and GDNR
- Local Congressional Offices
- Local Elected Officials
- Citizens Advisory Board
- Local media
- SRS Employees

In conclusion, the implementation of an administrative game animal release limit is part of the ongoing commitment by DOE-SR and its contractors to evaluate and implement programmatic changes to protect the public and environment from excessive exposure to radiation from SRS activities.

Questions that arose from this presentation were: Mary Drye asked if the hunters received any information or training regarding the new DOE Headquarters 30 mrem per year dose. Mr.

Fledderman stated that the hunters will receive both written and oral information on the new limits.

SRS Integrator Operable Unit Status and Update: Brian Hennessey stated that the purpose of this briefing is to provide a description of the IOU program; provide and annual status per CAB request and give an update on the IOU evaluations for:

- Lower Three Runs (LTR) IOU
- Steele Creek (SC) IOU
- Savannah River / Floodplain Swamp (SR/FS) IOU

Mr. Hennessey pointed out that the IOU program consisted of a three phase approach:

- Phase one – the IOU Work Plans
- Phase two – Investigation, Collect data, early actions if required
- Phase three – IOU Remedial Investigation / Feasibility Study; and the final IOU Remedial Action for each IOU

Mr. Hennessey stated that there was input from many entities regarding the IOU's, which included the following: Savannah River Site, Natural Resource Trustees, Environmental Protection Agency, Academia, Citizens Advisory Board, Georgia Department of Natural Resources, South Carolina Department of Health and Environmental Control and others.

Mr. Hennessey stated that there were six IOU's (Upper Three Runs, Fourmile Branch, Pen Branch, Steel Creek, Lower Three Runs, Savannah River / Floodplain Swamp). Susan Dyer presented that the IOU evaluation efforts included the following:

- Human Health / Ecological Threshold Screening
- Data Needs and Early Action Evaluation
- Bioassessment Monitoring
    - Fish assemblage

    - Macroinvertebrates (aquatic insects)
    - Fish tissue
    - Trophic modeling (contaminant modeling based on different food chain positions)
- Special Studies
    - Fish movement study (Savannah River and Steel Creek) – COMPLETE
    - Piscivorous (fish eating) bird prey survey – COMPLETE
    - Herpetofauna (reptiles/amphibians) survey – Scheduled for FY 2007
- Wildlife Survey (Literature-based survey)

Susan Dyer then presented the status of the Lower Three Runs IOU. Regarding Human Health Evaluation, there was a benchmark evaluation consisting of onsite worker, adolescent trespasser, and subsistence fisher). Regarding sediment: there were threshold exceedances for Cesium -137 in the Pond A subunit for the onsite worker, and signage at that location was already in place. Regarding sediment / soil: Cesium – 137 was found south of R-Area in the Ponds 4 and 5 subunit of LTR based on focusing on the onsite worker. Regarding surface water: lead was found in the lower part of LTR based on the adolescent trespasser scenario. Regarding fish: there were no new data for LTR Periodic Report (PR2). Given the findings, the early actions agreed to by the Core Team are as follows:

- Cesium -137 in sediment and sediment/soil, Lower part of LTR, signs were placed at road crossings.
- Cesium -137 in sediment and sediment /soil, Middle part of LTR, signs were installed.
- Cesium -137 in sediment and sediment / soil, Lower part of LTR, fencing placed at road crossings.
- PR2 Cesium in sediment /soil, an early action (signage) is warranted at hotspot south of R-Area in the Ponds 4 and 5 subunit. This area is being addressed as part of the R-Area Operable Unit.

Dr. Dyer stated the following in the Ecological Evaluation:

- Ecological exceedances were present for sediment, sediment / soil, and surface water for selected metals (surface water: cadmium, copper, lead, mercury), and a few pesticides (sediment and sediment /soil)

- Biological data shows fish Index of Biotic Integrity and macroinvertebrates assemblages in LTR (below the dam) are acceptable for these biological indicators

- The piscivorous bird survey shows risk from Cesium -137 to piscivorous birds is essentially non existent. Mercury may be an issue.

The Data are as follows:

- Ponds 4 and 5 Subunit: Gross alpha (1 sediment /soil location) and non-volatile beta (2 sediment / soil locations) follow-on alpha spectroscopy and non-volatile beta analyses will be conducted

- Ecological evaluation requires the finalization of the trophic modeling for ecological exceedances; continue wildlife survey; perform periodic monitoring of fish and macroenvertebrates; and periodic fish tissue monitoring (primarily Cesium -137 and metals)

Dr. Dyer then stated the next IOU for review is the Steel Creek IOU. Gerald McLane presented the update for the Steel Creek IOU. Regarding the human health evaluation, there was a benchmark evaluation consisting on the onsite workers and subsistence fisher scenarios. Regarding sediment; no action was required. Regarding sediment / soil: there were threshold exceedances for Cesium -127 in upper Steel Creek based on the onsite worker. Regarding the surface water there were lead threshold exceedances in lower Steel Creek based on the onsite worker. Regarding fish: there are no new data for the Steel Creek Periodic Report number 3. In addition the following early actions were agreed to by the Core Team:

- Implemented under work plan, signage in upper Steel Creek for Cesium -137 and highway 125 road crossing

- Periodic Report number 2 indicated expansion of signage in upper Steel Creek

- Periodic Report number 3 indicated expansion of signage along access points to all of upper Steel Creek

Additional human health evaluation of Cesium -137 warranted early action consideration and further evaluation based on Periodic Report number 3 data; and the fish movement study showed

minimal movement of largemouth bass within Steel Creek and the Savannah River and few fish escaped from dam systems (Par pond and L Lake). From an ecological evaluation low biotic integrity (fish) in upper Steel Creek was found and macroinvertebrate data shows a bio-classification rating of Good-Fair in upper Steel Creek which was previously impaired. The larval fish survey showed low abundance in lower Steel Creek due to cold discharges from L Lake. The data needs suggested the following action:

- Further characterization of upper Steel Creek to determine relative levels of Cesium -137 in depositional areas
- Habitat evaluation of upper Steel Creek to determine wildlife habitat suitable since game can serve as a pathway of exposure to human health
- Fish tissue evaluation of Steel Creek to determine trends of Cesium -137 in fish during phase two activities
- Finalize trophic modeling for ecological exceedances
- Periodic monitoring of fish and macroinvertibrates

Gerald McLane also addressed the Savannah River / Floodplain Swamp IOU. The following information was shared:

- Game data are evaluated in the IOU program
- Beginning in the Fall of 2006, DOE proposed and is using a dose limit of 30 mrem per year from ingestion of game animals based on a new draft DOE Guidance (a change from the dose limit used in previous years)
- A data need exists to determine low the IOU program will screen game data (deer and hog) and this will be done in the next periodic report
- A background or reference level is being developed upon which all three Agencies can agree

Mr. Hennessey provided some summary comments as follows:

- IOU program will continue to assess the site streams (each stream every two to three years)
- Longer term goals for Phase three (final action) requires resolution on background issues, final receptor scenarios, final remedial goals

- Early actions will continue to be implemented as needed, supported by Early Action Fact Sheets or other communications as necessary

- The CAB will continue to receive updates.

Public Comment: Liz Goodson introduced herself and stated that at one point in the history of the SRS Environmental Report contained more information. She is interested in knowing how to access that information.

Adjourn:

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