



## **Savannah River Site Citizens Advisory Board**

### **Approved Minutes**

**July 23, 1996**

**Stevenson-McClelland Building**

**Aiken, South Carolina**

---

Members Present were Ann Brown, Tom Costikyan, Bill Donaldson, Brendolyn Jenkins, Bill Lawless, Ann Loadholt, Suzanne Matthews, Kathryn May, Lane Parker, Karen Patterson, Kamalakar Raut, Deborah Simone, Bob Slay, Ed Tant and Vernon Zinnerman. Ex-officio representatives present were Tom Heenan, Charlie Anderson (alternate), Ann Ragan, Myra Reece and Camilla Warren.

Members absent were Arthur Belge, Aundria Cheever, Thelonious Jones, Mildred McClain, JoAnn Nestor, Andrew Rea, P.K. Smith and Beaurine Wilkins. Board Facilitator Walt Joseph was present. Currently, there are two Board vacancies following the resignation of Larry McKinney. The Department of Energy (DOE) Designated Federal Official present was Tom Heenan.

This meeting was open to the public and posted in the Federal Register in accordance with the Federal Advisory Committee Act (FACA).

### **Approval of Minutes**

The minutes of the May Board meeting were approved with one minor change.

### **Agency Updates**

Camilla Warren of the Environmental Protection Agency stated that EPA is commenting on the fiscal year 1998 budget process and is participating in the SRS Ten Year Plan activities. She also mentioned a recent tour of SRS and the fact that the Environmental Remediation Program is up and running.

Tom Heenan of DOE announced that SRS was in the process of putting together a plan to implement Assistant Secretary Al Alm's ten year vision for the DOE complex and that several public meetings were being conducted. He stated that Mr. Alm would be down for a full day review in August and encouraged CAB member participation. He also announced that the current revision of the Management Action Plan had been forwarded to Joel Massman for independent review and referred to the joint agency (DOE, EPA and SCDHEC) response to Board's Recommendation 22 (see attached). Mr. Heenan also invited Board members to tour SRS and see the progress of the Environmental Remediation Program.

Ann Ragan of the South Carolina Department of Health and Environmental Control (SCDHEC) announced several items out for public notice. The National Priorities Discharge Eliminations Systems permit is on public notice until July 28. Under the Resource Conservation and Recovery Act, a permit modification is upcoming on a final remedy selection for a solid waste management unit at the D Area Burning Rubble Pit, she said. She also stated that SCDHEC had just completed public notice on the Carolina Bay at Met Lab and did not receive any public comments. Ms. Ragan also provided Board members with a Citizens Guide to Health and the Environment and A General Guide to Environmental Permitting in South Carolina (see attached).

## **Public Comments**

*Sam Booher, Augusta, Ga. resident*

A letter from Mr. Sam Booher to Mr. Larry Ling of DOE regarding the closure of the high level waste tanks was read during the public comment session (see attached). Mr. Booher stated he was pleased a public meeting was held concerning the closure of the high level waste tanks, but he was disturbed by what he heard and did not hear. Mr. Booher was pleased closure on the old tanks was going to begin, but concerned that SRS was not treating the cracked and leaking tanks any different than intact tanks. (Mr. Booher's letter and DOE's response were provided to the full Board.)

## **Facilitator Update**

Board Facilitator Walt Joseph discussed site specific advisory board (SSAB) self evaluation and action plans which were due to DOE Headquarters by Aug. 30. He discussed the results of a DOE Headquarters national survey which included information from 580 respondents regarding 12 Boards and concluded that there is strong support for the Boards, yet many individuals are still undecided about the success of the Boards. He also provided a comparison of responses to various questions among three of the larger boards. He then discussed the schedule and due dates for all SSAB self evaluations and action plans. (See attached slides.)

## **The Savannah River Site Ecosystem**

Jim Heffner of Westinghouse Savannah River Company (WSRC) provided an overview of radioactive releases at SRS from 1954-1995 explaining that the best measurements are taken at the discharge pipes. He noted that measurements have been taken since before site operations began in the 1950s. Mr. Heffner explained that potential impacts on the river are from SRS discharges, changing land uses, improved wastewater treatment from Augusta and increased populations and industries upstream. All of these changes have had an effect on the river's ecosystem. He explained that releases from SRS were at their greatest in the 1960s and there has been a general decline since. Mr. Heffner showed graphs of the releases of plutonium-239, cesium-137, and strontium-89,90 and tritium to site streams from 1954-1995.

Mr. Heffner also discussed the work of Ruth Patrick and the Academy of Natural Sciences in Philadelphia. He showed slides of a number of species (diatoms) collected at all stations of the

Savannah River. He also showed a slide of the number of individual insects and species of insects collected at various monitoring stations. He stated that generally there has been a slight increase of all insects and diatoms and there is no evidence of degradation, particularly during the years when the site was operating at full capacity.

He concluded and summarized by stating the river's long-term health, as reflected in the number of individuals and species, has improved. He stated that generally, trends are similar upstream and downstream of SRS and there has been no apparent degradation related to SRS discharges.

Tom Hinton of the Savannah River Ecology Laboratory addressed the question "Have radioactive releases from SRS affected plant and animal populations?" (see attached slides). He approached this question from three directions. First, he presented historical data to give a sense of the amount of dose required before actually seeing effects to plants and animals. Second, he presented the consensus among the various national and international agencies concerned with effects of ionizing radiation on plants and animals and generally their philosophy is if humans are adequately protected, then so are plants and animals. Third, he presented actual data from SREL in corroboration with Mr. Ward Whicker of Colorado State University which answers a very specific question related to SRS: "What is the probability that the fish population onsite ever received sufficient radioactive contamination that the population might have suffered?"

Mr. Hinton discussed the fundamental difference between human risk analysis and ecological risk analysis and the fact that with humans, the focus is on individuals and with ecology the focus is on population. He also discussed how only a small fraction of radiological research is directly relevant to plant and animal responses in nature. He then discussed radiation effects on animals and short-term doses required to damage plant communities. He discussed radiosensitivity of plants and provided a chart of acute lethal dose ranges for plants and animals.

Mr. Hinton further discussed the effects of ionizing radiation on aquatic organisms and the general prevailing view on radiation protection for species other than man, quoting the International Commission on Radiological Protection "if man is adequately protected then other living things are also likely to be sufficiently protected." He concluded with a discussion regarding the work of SREL and Colorado State. He explained that fish were chosen as the organism of concern because embryonic stages and gametogenesis are most sensitive to chronic radiation. He concluded that radiation releases from SRS have not been sufficient to cause mortality and have actually benefited plants and animals because of the exclusion of humans in such a large area.

### **Environmental Remediation & Waste Management (ER & WM) Subcommittee Report**

Subcommittee Co-Chair Kathryn May gave an update on the Tritium Health Effects Studies being conducted by the National Institute for Occupational Safety & Health. She referred to CAB Recommendation No. 7 which requested a study of the biological effects of tritium on DNA and then provided an update on a study of effects of tritium, radiation and chemicals on leukemia by NIOSH, in which the final report is expected in late 1998. She also discussed a study by the Consortium for Risk Evaluation and Stakeholder Participation, which as part of its grant will study risks broadly across the DOE complex. This study may include a tritium

toxicology study and focus on offsite public and ecological factors. It currently targets six DOE sites. (see attached slides).

Subcommittee Co-Chair Bill Lawless gave a brief presentation on the benefits of using the internet as a communication medium and showed illustrations of various home pages. He then introduced Barry Hudson of WSRC who provided a demonstration of the CAB's Home Page which currently is a part of the SRS Home Page ([www.srs.gov](http://www.srs.gov)). Many ideas were generated by Board members for enhancing the home page.

Jim Heffner of WSRC provided an update on the Environmental Advisory Committee's (EAC) review of the SRS Annual Environmental Report. He referred to CAB Recommendation No. 1 which requested an annual EAC review of the document and then explained that the EAC consisted of six world renown experts in their various fields. He stated comments from the EAC fell into three categories: short fixes, programmatic guidance and how to re-communicate in future annual reports. He stated that all thirteen chapters of the annual report had been sent to all EAC members and their comments had been incorporated. The report was expected to be distributed by September.

Larry Ling of DOE gave an update of the SRS High-Level Waste Tank Closure project (see attached slides). He discussed the status and schedule of the project stating that a public information meeting had been held on June 11 and the final closure plan delivered to SCDHEC and EPA on July 15. DOE expected to receive approval on the plan by July 31 and issue a final environmental assessment. Tank 20 is expected to be closed by December 31, 1996. He stated the two issues to be resolved include obtaining Nuclear Regulatory Commission concurrence on incidental waste classification and verification of positive grout formulation.

### **Trans-Savannah River Groundwater Flow Study**

John Clarke of the U.S. Geological Survey gave a presentation on the Trans-Savannah River Groundwater Flow Study. The objectives of the study is to (1) determine if groundwater is flowing from SRS, beneath the Savannah River, and into Georgia and (2) evaluate under what conditions such "trans-river flow" could occur. Participants in the project include DOE, Georgia Department of Natural Resources (GADNR) and Georgia and Clemson universities. Technical oversight for the project is provided by the U.S. Geological Survey, DOE and its contractors, SC Water Resources Commission, the SC Geological Survey and GADNR. The study is in its sixth year and project funding is \$6 million. The study area includes five Georgia counties and three South Carolina counties. The mission of the U.S. Geological Survey is to collect and analyze earth science data, provide unbiased technical assessments of earth science and report findings of investigations. The Survey does not have a regulatory role.

Mr. Clarke discussed the geologic settings of the various counties being studied, the groundwater chemistry data, the number of wells tested, and a groundwater flow model. He stated that findings are preliminary, however six technical reports have been completed with others in progress. He discussed remaining work and the fact that it appears funding is lacking to complete the project in 1997. He concluded that data collected appears to indicate there is trans-groundwater flow from South Carolina to Georgia, however further tests are needed. Other

applications for the results of this study could be to provide information for ongoing SRS studies, to provide regional hydrogeologic and geological frameworks for on-site investigations and to provide natural hydrogeologic boundaries in the study area.

### **Nuclear Materials Management Subcommittee Report**

Subcommittee Chair Tom Costikyan announced the Nuclear Materials Management Subcommittee has been learning about the seismic capabilities of the SRS canyons as its next issue for Board consideration. He introduced Brent Gutierrez of DOE who gave a presentation on the current Canyon Seismic Evaluation (see attached slides). He discussed why the evaluation was necessary, the status of the evaluation, evaluation results, DOE internal reviews, DOE independent reviews and the path forward.

Mr. Gutierrez stated DOE was notified by WSRC in February 1996 of potential inadequacies in a structural analysis and the fact that canyons may be more susceptible to earthquake damage than previously determined. It was decided that further evaluation was required. The overall status of the evaluation is that the F-Canyon evaluation is complete while the H-Canyon evaluation is in progress. DOE internal evaluations are complete and independent evaluations are still in progress, he said. Mr. Gutierrez said the internal review for F-Canyon concluded the canyon has a 50 percent chance of failure at an 8000 year earthquake (an earthquake of such intensity that it is only expected to occur once every 8000 years) and that F-Canyon meets the criteria in DOE Standard 1020-94 for an existing facility. Analysis and review of H-Canyon is still pending, he said.

Discussion revolved around the importance of the seismic studies, accident scenarios, the various components of the canyons and scientific instrumentation. Tom Costikyan also noted the subcommittee had reviewed the resumes of the independent review team.

Mr. Costikyan discussed a recent critical report issued by Billy Keyserling regarding the L Reactor Basin. He said the report disturbed him and he contacted DOE and felt reassured that the L Reactor Basin was receiving appropriate corrosion upgrades and being carefully watched. He suggested Mr. Keyserling be invited to the next CAB meeting in Beaufort.

### **DOE Board-Related Grants**

Bob Slay stated that Board members had voiced opinions about some grants being duplicative in nature to what the Board does. He said he asked DOE to please inform and coordinate with the CAB when these types of local grants are being considered. He noted that Board member participation with various ongoing grants is each individual's decision.

### **Risk Management & Future Use Subcommittee Report**

Subcommittee Chair Vernon Zinnerman updated the Board on the activities of the Risk Management & Future Use Subcommittee and showed a schedule and locations of all subcommittee meetings held. He then introduced the SRS Deputy Manager Ernie Chaput who presented the SRS Ten Year Plan. Mr. Chaput presented Assistant Secretary Al Alm's vision for

complete cleanup of the DOE complex within the decade. He noted that while significant progress will be made at SRS, Hanford and Idaho, these sites will continue cleanup operations beyond 2006. He stated this vision will drive budgets and priorities and be a living document that manages the national program. He discussed the following seven principles of the Ten Year Plan:

1. manage and eliminate most urgent risks
2. reduce mortgage and support costs to free up resources for further risk reductions
3. protect worker health and safety
4. reduce the generation of waste
5. create collaborative relationship between DOE, regulators and stakeholders
6. focus technology development on cost and risk reduction
7. enhance cross-site integration of waste treatment and disposition

Mr. Chaput presented the following schedule for Ten Year Plan activities:

- June 26 Review concept with stakeholders
- July 16 Stakeholder meeting - Allendale, S.C.
- July 17 Review plan with EPA & SCDHEC
- July 22-23 Review plan with CAB
- July 31 Submit interim draft to DOE-HQ
- Aug 1-Sept 25 Determine additional stakeholder interaction
- Sept 25 Submit revised plan to DOE-HQ

Mr. Chaput explained how several programs would be accelerated. He said all high risks remediations would be completed by 2006; an additional \$20 million would be applied to the TRU Waste program to identify treatments; all problem high level waste tanks would be removed by 2006; and \$100 - \$150 million would be applied per canyon to accelerate its activities. He said additional environmental remediation activities would be accelerated ahead of current regulatory commitments with remaining funding. Privatization efforts will result in considerable cost savings, he said.

Discussion revolved around privatization efforts, concerns relating to spent fuel storage and technology capabilities and whether some decisions are technically-based or merely political.

### **Outreach Subcommittee Report**

Subcommittee Chair Lane Parker thanked all Board members who participated in the CSRA Black Expo in Augusta, Ga. He also announced that Tom Costikyan and Ed Tant would be attending local county meetings to provide information about the CAB prior to the September Board meeting in Beaufort, S.C.

### **Handouts**

- SRS Citizens Advisory Board Meeting Agenda, July 23, 1996
- Health and the Environment - A Citizens Guide, SCDHEC

- A General Guide to Environmental Permitting in South Carolina, SCDHEC
- Letter from Mr. Sam Booher to Mr. Larry Ling
- SSAB Self-Evaluations and Action Plans, Walt Joseph
- "Have Radioactive Releases from the SRS Affected Plant and Animal Populations?", Tom Hinton, SREL
- Biodiversity Prospect & Promise for the SRS, Tom Hinton, SREL
- Tritium Health Effects Studies Update, Kathryn May
- SRS High-Level Waste Tank Closure slides, Charlie Anderson, DOE
- Canyon Seismic Evaluation slides, Brent Gutierrez, DOE
- Letter from DOE, EPA and SCDHEC to Bob Slay dated July 9, 1996
- CAB Recommendations Summary
- EIS Citizens Advisory Board Monthly Report
- SRS Public Involvement Calendar