



SRS Citizens Advisory Board

Old Radioactive Waste Burial Ground Focus Group

Meeting Summary

May 31, 2000
Aiken Federal Building
Aiken, SC

The Citizens Advisory Board (CAB) Old Radioactive Waste Burial Ground (ORWBG) Focus Group met on Wednesday, May 31, 2000, 5:00 p.m. at the Aiken Federal Building, Aiken, SC. The purpose of the meeting was to discuss the Hot Spot intruder analysis and Carbon-14 fate/transport, Carbon-14 in the Environmental Monitoring Report, and the status of the Corrective Measures Study/Feasibility Study (CMS/FS) for the ORWBG. Those in attendance were:

CAB Members

Jimmy Mackey
Bill Willoughby
Karen Patterson

Stakeholders

Lee Poe
Jerry Devitt
Gene Rollins
Bill McDonell

DOE/Contractors

Ed McNamee, BSRI
Don toddings, BSRI
Tim Jannik, SRTC
Elmer Wilhite, SRTC
Jim Cook, SRTC
Jim Moore, WSRC

Jimmy Mackey, Administrative Lead, called the meeting to order. The meeting agenda was changed putting the Carbon-14 discussions first. Later in the meeting, the Hot Spot intruder analysis discussion was postponed to another meeting in the future due to time constraints.

Tim Jannik, SRTC, works on the environmental dosimetry reported in the Savannah River Site (SRS) Environmental Monitoring Report. He gave a presentation on the facts related to carbon-14. The general discussion was that carbon-14, which has a half-life of 5,730 years, naturally occurs in the environment at about 6 picocuries per gram total carbon. The dose to an average person from naturally occurring carbon-14 is about 1.4 millirem/year. Most carbon is obtained through the food we eat. Weapons tests added 9.6 million curies to the atmosphere. The SRS has only released about 2,980 curies of carbon-14 to the atmosphere during its lifetime. Carbon-14 was not routinely measured in liquid effluents, but releases via liquid effluents would have been small. The residual inventory of carbon-14 is about 6,800 curies of which 3,100 curies are in the Old Burial Ground and 3,700 curies in the Mixed Waste Management Facility. Most of this carbon-14 resides on deionizer resins. The drinking water standard for Carbon-14 is 2 picocuries/milliliter, which leads to a dose of about 3.1 millirem/year. However, if a person were to eat 41.8 lbs./year of fish living in water containing 2 picocuries/gram of carbon-14, their dose would potentially be 367 millirem/year. This assumes that the bioaccumulation factor for carbon in fish is 4,600 and that the fish get all their carbon from the water. These are very conservative assumptions.

Elmer Wilhite, SRTC, gave a briefing on the Carbon-14 in the SRS Composite Analysis (CA). The CA considers all expected sources of radioactive material that could add to the dose received by a hypothetical future member of the public from the active Low-Level Waste (LLW) disposal facility. This CA considered the general separations area with boundaries of Fourmile Branch and Upper Three Runs. Mr. Wilhite explained the methodology used to do the dose calculations. The results indicated that the peak

compliance dose at Upper Three Runs mouth will be 1.8 millirem/year and the peak dose at Fourmile Branch mouth will be 14 millirem/year which are both less than the DOE limit of 100 millirem/year and dose constraint of 30 millirem/year. The maximum Carbon-14 dose of 14 millirem/year at Fourmile Branch mouth is expected to occur in 400 to 500 years.

During discussions of both presentations on Carbon-14, it was felt that there should be no long-range concern with Carbon-14. However, it was pointed out that the regulators are constrained by regulations and are looking for reductions in contaminate concentrations.

Ed McNamee, BSRI, gave a status on the CMS/FS schedule. He stated there are four alternatives being looked at. They are protecting individuals by installing a cover system with a permeability of 10^{-5} centimeters/second (cm/s), a cover system with a permeability of 10^{-5} cm/sec with a bio/intruder barrier, a cap system with a permeability of 10^{-7} cm/s, and a cap system with a permeability of 10^{-7} cm/s and a bio/intruder barrier. The criteria used in evaluating the alternatives are Protectiveness, ARARs (Applicable or Relevant and Appropriate Requirements), Short Term effectiveness, Long Term effectiveness, Treatment, Cost and Implementability. The alternative must meet the first two criteria by law or it is not a remedy.

Three of the criteria can be eliminated. Short Term remedy because it is all the same for all four remedies. Treatment because there is no treatment component in any of the remedies. Implementability because there is no new technology and all four remedies are equally implementable.

The costs are approximately \$1.7 million, \$8.6 million, \$8.8 million and \$15.7 million for each alternative respectively. Provided that the threshold criteria are met (protectiveness and compliance with ARARs) for all four remedies, then the cost criteria must be balanced against the Long Term effectiveness, i.e., is it worth \$1 million for a particular effect.

It is felt the alternatives may meet the Protectiveness criteria since there is mitigation to the groundwater and the site assumes institutional control. Mr. McNamee gave the South Carolina Department of Health and Environmental Control (SCDHEC) current position that the ARARs criteria may not pass because the cover systems may not meet the relevant and appropriate portions of RCRA. He also gave the Environmental Protection Agency (EPA) current position that all four general remedies meet the ARARs criteria. (SCDHEC and EPA were not present at the meeting). The ARARs criteria must be settled in order to proceed with the Proposed Plan.

SRS and the regulators have additional talks on June 13. Hopefully the issues will be resolved. SRS is due to respond back to the regulator's comments on the CMS/FS by July 11. There could be a slippage in the schedule anywhere from three months to one-half year if the issues on the CMS/FS are not resolved in the near future.

DOE is proposing the 10^{-5} alternative. SCDHEC prefers the 10^{-7} alternative. EPA tends to prefer an alternative with the barriers.

Lee Poe, Technical Lead, reviewed the path forward for the Focus Group. Four major areas were discussed. They were:

- ISPR Report on health effects of SW Plume
- WSRC refined effects of interim action environmental effects
- CMS/FS Revision 1
- Proposed Plan

In addition, Mr. Poe discussed the Focus Groups work associated with:

- Intruder analysis
- Comparison of risks for ORWBG compared with other DOE or DOD sites that are closed
- FG report on ORWBG analysis

These discussions established the schedule for the next several months' meetings. They are:

- July 12
- August 2
- August 30

Mr. Poe stated that the Focus Group should prepare a report with conclusions and recommendations shortly after the Proposed Plan is issued but before the first revision of the Proposed Plan. The report would be without risk comparisons to other closed sites in September or October. In November or December, a report would be issued including risk comparisons to other closed sites.

With no other comments, Jimmy Mackey adjourned the meeting.

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