SRS Citizen's Advisory Board

SRS Citizens Advisory Board

Old Radioactive Waste Burial Ground Focus Group

Meeting Summary

March 13, 2001
Aiken Federal Building
Aiken, SC

The Citizens Advisory Board (CAB) Old Radioactive Waste Burial Ground (ORWBG) Focus Group met on Tuesday, March 13, 5:00 p.m., at the Aiken Federal Building, Aiken, SC. The purpose of the meeting was to review the status of the phytoremediation process, the Proposed Plan status, consolidation at the ORWBG, status of bamboo cover, and section 1, 2, 8 and 9 of the draft final report, as well as the path forward. Those in attendance were:

CAB Members:	Stakeholders:	DOE/Contractors:
Bill Willoughby	Lee Poe	Rod Rimando, DOE
Jerry Devitt	Bill Lawless	Ed McNamee, BSRI
		Don Toddings, BSRI
		Sonny Goldston, BNFL
		Jim Cook, WSRC
		Jim Moore, WSRC

Lee Poe, Technical Lead, welcomed those in attendance and reviewed the agenda.

Status of Phytoremediation:

Ed McNamee, BSRI, stated that a sheet pile dam had been installed in August 2000. In October, the valve on the dam was closed to begin impounding water. Once full, the water would cover two acres and hold two thousand gallons of water. The dam slowly filled up over several months. As soon as the valve was turned off, there was a distinct difference in the concentrations at Fourmile Branch (4MB). While the initial goal was to obtain 25% reduction in concentration, there was an immediate gain of 50 to 65%. This was a lot more than expected. The final goal objective is 75%. Because of more accurate ability to measure at the valve, it was also felt that the previous projection of there being 3,000 curries (Ci) in the stream was not correct. It appears to be closer to 1,500 Ci. In addition, when the valve was first closed, there was no seepage from the dam giving it the optimum condition.

The irrigation system was installed in January over 29 acres. The system was turned on about 11 minutes a day based on the quantity of water the trees could absorb. The projection is that in the cold months like January, the projection will be eight minutes a day while in the hot months, about 30 minutes a day. The amount of water is based on U. S. Forest Service calculations. Eventually, it is hoped the system will operate automatically based on sensors.

The cost for the system is $1.2 million compared to F&H pump and treat of $30 million. The cost to operate is $.4 million per year. The longest projected duration of operation is 100 years; however,

the system will be reevaluated periodically to attempt to decrease cost and the operating time period. Ten years ago, the models indicated that a plume would move completely thought a region and be removed within a specific and shorter period of time. Recent multiple porosity studies indicate that the various soils can store contaminated particles and then release them causing continued contamination for long periods of time. As 4MB meets the drinking water standards, more passive activities may be implemented to reduce cost. The three phases for evaluation will be water quality in steams, the seepage area, and then the groundwater.

Crop rotation will be required to remove older trees with younger trees that will absorb more water. The older trees will clean themselves of tritium within six months of the irrigation system being turned off. The older, clean trees will then be harvested just like other trees on the site.

Consolidation at ORWBG:

Mr. McNamee stated that there are three contaminated units close to the ORWBG. The identity, cubic yards and Ci for the three units are as follows:

Units:	Cu Yds:	Ci:
HRB	10,165	55.0
HP52	11,300	1.2
Warner Pond	10,650	2.2
Total	**32,115**	**58.4**

Initially, the plan was to grout these areas. Both the Environmental Protection Agenda (EPA) and the South Carolina Department of Health and Environmental Control (SCDHEC) have regulations that principal threat source material that pose a carcinogenic risk level of 10^{-3} or above (A risk of 1 x 10^{-3} is the probability that 1 out of 1000 individuals will develop cancer over a lifetime.), must be evaluated to stabilize and make them less mobile. There are two problems with these three units. (1) A stream runs through Warner Pond and close to the other two units, and (2) these units sit on hard pan that cause a perched water table.

There have been two options for the contaminate from these units, dig it up and place in a cell above the water table ($20 million for H Retention Basin only. Warners Pond and HP52 have not been costed.) or ship it off to Enviro-Care ($18 million for H Retention Basin only.). It has recently been proposed that the contaminant be placed in the ORWBG with a geosynthetic cap ($6 million). The site is working with the regulators to group these sites together as a super Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) unit in order not to trigger other laws or regulations.

There was some concern about the need for a geosynthetic cap. It was felt that the regulators would require upkeep of the cap increasing the cost. In addition, the draft ORWBG Focus Group Final Report will be recommending that no action is required for the ORWBG as opposed to a geosynthetic cap.

Status of the Proposed Plan:

Mr. McNamee stated the site continues to work with the regulators to come up with a workable solution based on these new conditions. It is expected that the Proposed Plan will be available by November or December. The site is going forward with an interim action to fill the Solvent Tanks with grout. That should occur in the summer. Bill Lawless requested that the Focus Group be allowed to review the interim action.

Status of Bamboo Cover:

Jim Cook, WSRC, stated that he had a two-acre test plot of bamboo. Eight to ten species of bamboo were considered and the best two were selected. Bamboo is used in the Performance Assessment (PA) as the final vegetation cover for the conceptual closure. One of the obstacles is that the regulators want to walk down the cap and that wouldn't be possible with bamboo. It was pointed out that no one in the DOE complex has put down or used a final vegetation cover. DOE Savannah River has approved the bamboo cover as part of the PA.

It was pointed out that nothing native to South Carolina eats bamboo. The bamboo also shades out other vegetation. Bamboo generally has a generation cycle of 100 years. It then produces seeds and produces a new generation. One of the species selected has a generation cycle of 100 years and the other has a generation cycle of 80 years so they will overlap. The bamboo selected is eight to ten feet high. The root system is very shallow. Mr. Cook was asked to obtain the erosion rate for bamboo. Mr. Cook did say the bamboo would remove water from the area.

Final Report Section Review:

Mr. Poe stated that there were four new sections that would be reviewed, Section 1, 2, 8 and 9. However, there is one open issue from the last meeting. The question on the dose conversion factor used by the Independent Scientific Peer Review (ISPR) team, the International Congress on Radiation Protection (ICRP) 20 proposed in 1991 by EPA, or the National Bureau of Standards (NBS) 69 Handbook. Mr. Poe read a message from Patricia Lee, WSRC, which stated the methods used by the ISPR were the most current methods recommended by DOE, thus the ISPR report was accurate. Mr. Willoughby stated this was on target with what he had read.

Mr. Willoughby stated that he would recommend that during active institutional control a mixing zone be used to get the water to drinking water standards. He said only 2% of the Savannah River would be required to dilute the water. South Carolina regulations allow for mixing zones. For Carbon-14 and neptunium, it would take 20% of 4MB for dilution. Bill Lawless suggested that rather than putting the percentage numbers in the sections, it would be better to put the words within 100 years or feet into the Savannah River. Mr. Willoughby stated that the carbon-14 and neptunium would not affect the river until 2160.

Mr. Poe stated that Section 1 of the report sets the stage for the rest of the report.

Jerry Devitt, the author of Section 5, stated that he had received some comments and handed out his revised Section 5. Mr. Devitt stated that the tables at the end of the section needed to be placed after the third paragraph of the section.

Mr. Willoughby, the author of Section 8, stated that Section 8 summarizes Appendix H. This section compares the waste buried in the ORWBG with the same type waste buried at other sites in the DOE complex. It basically confirms that there is no problem leaving the waste buried where it is.

Mr. Willoughby, the author of Section 9, stated that Section 9 discusses the existence of current EPA and SCDHEC drinking water regulations and their application. It quotes the mixing zone regulations allowed by SCDHEC. It also notes that Port Wentworth is the first public drinking water intake location along the Savannah River and the maximum concentration at that location is very low compared to the regulation.

Mr. Poe, the author of Section 2, reviewed the section. He stated this section includes the conclusions and recommendations. Both were taken from the various sections and appendices.

He reviewed each recommendation and asked the Focus Group members to take a careful look at this section to make sure no recommendation is left out and that those stated are accurate.

Path Forward:

Mr. Poe stated that at this point, other than Section 5 and Section 8, the authors had concluded with their portion of the work. Section 5 and Section 8 still needed to be reviewed and comments made. Once these comments were completed, these sections would be complete also. Dr. Crawford and Mr. Poe would edit the balance of the sections and appendices. Mr. Poe stated that he would ask Karen Patterson to give the report one last editorial review if she has time. It is expected this review would be complete in two months. At that time the report would be issued for review for technical accuracy. It is expected that the ER Committee, regulators and SRS would be requested to review the draft. The report would then be issued to the ER Committee. Mr. Moore was requested to review the Federal Advisory Committee Act (FCFA) to see if there were guidelines on reviewing such a document.

It was determined the next meeting would be sometime in April. With no other comments, the meeting was adjourned.

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