SRS Citizen's Advisory Board

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Environmental Remediation Committee

Meeting Summary

July 24, 2000
Sheraton Augusta Hotel
Augusta, GA

CAB Members	Stakeholders	DOE/Contractors
Jimmy Mackey*	Lynn Waishwell, CRESP	Gerry Stejskal, WSRC
Maria Reichmanis*		Paul Sauerborn, WSRC
Murray Riley*	**Regulators**	John Gladden, WSRC
Sallie Connah*	Julie Corkran, EPA	Bill Payne, WSRC
Kathryn May*	Keith Collinsworth, SCDHEC	Chris Bergren, BSRI
		Mitch Mascoe, DOE
		Don Gordon, WSRC
		Dale Bignell, WSRC
		Tim Jannik, WSRC
		Bill Littrell, WSRC
		Brian Hennessey, DOE
		Winona Specht, SRTC
		Kim Wierzbicki, BSRI
		Dawn Haygood, WSRC

*Denotes CAB ER Committee Members
Note: Perry Holcomb and Beaurine Wilkins of the ER Committee were unable to attend meeting.

Introduction: Jimmy Mackey introduced himself and then asked for introductions.

Schedule Review: Paul Sauerborn reviewed the schedule noting topics to be reviewed through the end of calendar year 2000, and requested any suggested addition.

CAB Recommendation 122 Response: Bill Payne presented the response to actions required in CAB Recommendation 122. Mr. Payne explained that the existing Total Maximum Daily Load (TMDL) is based on the Georgia fish advisories, which is much lower than the drinking water standard for mercury. He explained that the proposed TMDL is a result of a Sierra Club lawsuit against Georgia, and EPA was required to write TMDL's since Georgia did not. The limit of 1 part per trillion (ppt) as proposed would cause serious cost impacts to the Savannah River Site (SRS) and other Savannah River Basin Facilities. Mr. Payne proceeded to answer the three questions raised in recommendation 122. In response to which outfalls can meet a 1ppt TMDL, of 33 outfalls none would meet the limit. As to what treatment technologies meet 1ppt TMDL, Mr. Payne indicated that there were no known wastewater treatment processes that could achieve 1ppt. In response to what the SRS budget requirement to meet the TMDL, it appears that there is no detailed cost estimate number at this time, however it is projected that the

treatment costs are expected to be in the millions of dollars. Jimmy Mackie asked Dr. Julie Corkran what EPA would do in the way of fines to SRS if they can not meet the 1ppt limit. Dr. Corkran stated that it would be premature to venture any guesses at this point, the issue is still not resolved and EPA Region IV is gathering information all along the Savannah River in their effort to establish a reasonable limit. Sallie Connah asked what parts of the river would be sampled and Bill Payne stated that all parts from Lake Thurmond Dam to the coast in Savannah, Georgia.

Bill Payne was asked explain the requirements of the South Carolina Water Quality Regulation 61-68 Triennial Review. He stated that States are required by law to review their water quality regulations every 3 years and South Carolina's is due in 2001. Mr. Payne stated from a preliminary draft that both water quality and human health that the limit for metals such as copper, lead, and zinc would be cut in half. Mr. Payne stated that from a biological perspective the Whole Effluent Toxicity (WET) tests would be more difficult to pass due to reduction in size and availability of mixing zones in receiving streams.

Mercury in the Savannah River Site Environment: Bill Littrell and Tim Jannik teamed to address mercury in the SRS environment. Mr. Littrell stated that mercury comes from both natural and industrial sources and is a complex process. Mercury can be transported by evaporation from soils and water to the atmosphere, then re-disposed of back to the land and surface waters in the form of rain just to be re-evaporated again. Mr. Littrell indicated that mercury is found in three forms:

- Elemental - that which is found in thermometers and thermostats
- Inorganic - such as cinnabar ore and
- Organic or Methyl - which is a human health risk, where found in fish, 90-100% is this type

Mr. Littrell pointed out that generally higher levels of mercury are found in predator fish such as Bass and Bowfin as opposed to Bream and Catfish because they are at the top of the food chain. Mr. Littrell also reported that from 1970 until today the levels of mercury found in fish from the Savannah River has remained constant.

Tim Jannik presented general information as to the effects of exposure to mercury. Observed human health effects in Iraq were:

- Central Nervous System – impaired senses, muscle and memory loss
- Brain damage and Metal retardation - in prenatal children

Mr. Jannik stated however, that mercury is not considered a carcinogen or cancer-causing agent. Mr. Jannik explained Hazard Quotient (HQ), Referenced Dose (RfD), and Chronic Daily Intake (CDI) as they would relate to mercury concentrations in fish. Mr. Jannik stated that the concentrations of mercury in fish should not exceed .23 milligrams/kilogram for fish consumed in Georgia, and .25 milligrams/kilogram in South Carolina. Mr. Jannik presented both the Georgia and South Carolina fish advisory concentration limits, which show the quantity of fish by concentration level that can be consumed per person. Dr. Corkran was interested in the areas at the Savannah River Site that contribute mercury to the Savannah River and environment. Mr. Jannik gave some examples at SRS as the separation area, power plant, A-area air stripper, and discharges from the sites treatment facilities.

CAB Recommendation 123 Response: Don Gordon provided an update on costs associated with toxicity testing and a general status of the alternate species proposal as requested by CAB recommendation 123. Mr. Gordon pointed out the cost of toxicity testing investigation as follows:

- The cost of conducting alternate species toxicity investigation was $180,000
- The cost of Toxicity Identification Evaluation (TIE) on outfall effluents for which toxicants were identified was $215,000; and for those toxicants not identified was $90,000

- The cost of the TIE on Outfall A-11 effluent where the toxicity testing failures were due to low hardness of the water and not a toxicant was $100,000

Mr. Gordon presented the following on alternate species testing:

- Alternate species can be successfully cultured in soft synthetic waters;
- Alternate species (D. ambigua) is as sensitive as standard organism (C. dubia);
- Some variability in test results at outfall A-01; D. ambigua was equally sensitive to effluent as C. dubia in 3 of 4 tests and D. ambigua did not respond to toxicity on one test but C. dubia did respond;
- The toxicity of outfall A-11 is due to low hardness of water and not the presence of a toxicant.

In summary, Mr. Gordon stated that the overall cost for investigations into toxicity testing failures due to inadequacies of test method has been $100,000. Daphnia ambigua is considered to be a suitable alternative species for toxicity testing in soft water environments based on SRS research, and in conclusion EPA is reviewing the alternate species testing report and hopefully will make a decision in the next couple of months.

Status of SRL Seepage Basin Contract: Chris Bergren presented the current status on the Savannah River Laboratory (SRL) seepage basin project. Mr. Bergren stated that the project was on schedule and that Basin One has been cleaned and prepared for backfill, Basin Two has been cleaned and prepared for backfill, Basin Three is being used to homogenize the contaminated soil from Basins One and Two, and basin four is complete. Mr. Bergren stated that once the contaminated soil has been mixed to acceptable shipping limits it will be packaged and staged at a designated rail location on site for loading and eventual shipping to Envirocare, in Utah for final disposal.

CAB ER Recommendation Review: Maria Reichmanis reviewed the following CAB Recommendations for change in status:

Recommendation #	Current Status	Proposed Status
59	open	closed
76	pending	closed
86	pending	open
87	pending	open
96	open	closed
98	pending	open
106*	pending	closed
113	pending	open
114	pending	open
117	pending	open

*** Although the Old Radioactive Waste Burial Ground (ORWBG) focus group recommended to close this motion, three items were requested to go in the record: 1) The action is neither necessary nor cost effective. 2) The focus group requests periodic updates on the progress of the remediation. 3) The focus group will prepare a letter documenting their disagreement with the planned action, and include it in the historical CAB Recommendation files.**

Public Comments: Mr. Mackey asked for public comment. There were none.

Mr. Mackey thanked the attendees, and the meeting was adjourned.

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