



SRS Citizens Advisory Board

Environmental Remediation & Waste Management Subcommittee

Meeting Summary

Hilton Head Island, S.C.

August 24, 1996

The SRS CAB's Environmental Remediation and Waste Management (ER&WM) Subcommittee met on August 24, 1996, at 11:30 A.M. at the Town Hall in Hilton Head, South Carolina. Bill Lawless and Kathryn May, Co-chairs of the Subcommittee, opened the meeting with introductions. CAB representatives present included Mr. Lawless, Ms. May, Deborah Simone, Arthur Belge, Walt Joseph, Ed Tant, Anne Brown, and Vernon Zimmerman. Representatives from the Department of Energy (DOE-SR) included Charlie Anderson, Larry Ling, Tony Towns, and Gerri Flemming. Kelly Way and Mary Flora attended from Westinghouse Savannah River Company (WSRC); Other attendees were as follows: George Minot, Pat Tousignant (public), Gerry Stejskal, (WSRC), Penny Cornett (SCDHEC), and Detlef Schmidt (NUKEM Nuclear Technologies). Gerri Flemming was the Associate Designated Deputy Federal Official.

Mr. Lawless welcomed the attendees, announced the meeting agenda for the day and briefly outlined future ER & WM subcommittee topics: fish advisory, Consolidated Incinerator Facility (CIF). When asked by a member of the public, Mr. Lawless explained that CIF is a facility built and approved for operation, but has not begun to operate yet. Mr. Minot stated a report exists concerning a controversy with rotary kiln safety. Mr. Lawless emphasized the numerous studies done in connection with CIF and its safety, invited him to the next subcommittee meeting in which CIF is to be discussed, and offered inroads to DOE that Mr. Minot could contact with his concern.

Mr. Lawless then turned the program over to Charlie Anderson for an update on HLW Tank Closure. Mr. Anderson gave a quick status and schedule of Tank Closure, then proceeded with the scheduled presentation on Saltstone Alternative (see attached slides).

Mr. Anderson pointed out that an alternative must meet regulatory requirements and drastically reduce life cycle costs. Extensive studies on operating and construction costs have been done. Saltstone is mixed with cement, flyash and slag and pumped to the vaults where it solidifies. The concrete vaults and the grout slow down the release or migration of any radionuclides to the environment, he said.

Mr. Minot questioned the \$20 million dollar cost of the vaults and the amount of waste one vault would hold. Mr. Anderson pointed out the vaults are reinforced concrete vaults with certain mandatory landfill vault standards that escalate construction costs. The high costs are also due to

the nuclear construction codes that are required, he said. These vaults are the final disposal for the saltstone process. The vault will hold 3 million cubic feet of saltstone or 15 of the vaults will hold all of the saltstone waste SRS has to process in the next twenty years.

Ms. Tousignant asked about the approximate costs to care for the waste through the entire saltstone process (cost of processing per vault). The annual operating costs of Z-area of processing currently is 11-12 million dollars per year which is approximately 240 million dollars for the next twenty years.

Mr. Lawless questioned the amount of time required to fill up twelve cells. Mr. Anderson responded that the actual time varies and that Savannah River is constantly striving to increase the production in the HLW system. The Savannah River Site 10 Year Plan and Revision 7 of the HLW System plan are being developed, but at present, the plans call for 15 total vaults.

Ms. May questioned if SR had studied any new technology since construction of the first two vaults. Mr. Anderson assured her that studies and technologies are continually examined. Mr. Lawless questioned closure costs. Mr. Anderson explained how closure itself will basically stay the same. The alternative being considered would not change the closure design, but instead would replace current saltstone vaults with a new engineered industrial landfills.

Ms. Tousignant and Ms. Brown questioned what should be expected in the groundwater and when it should be expected. Mr. Anderson stated in approximately 2000 years trace amounts of radioactive isotopes may migrate. Although the isotopes would not be at a level to cause any problems, SRS would continue to monitor the water. A leachate collection system would be in place also to prevent migration.

Mr. Lawless and Ms. May expressed concern about saltstone remaining intact for 2000 years partly because rainwater will never reach the saltstone in the vaults. He suggested that rainwater could help break down the saltstone. He would like for this matter to be studied before tank closure. Mr. Anderson stated uncovering Saltstone intact would be less of an environmental concern than finding trace amounts of radionuclides in the drinking water.

Mr. Minot expressed concern about the length of time it has taken SRS to close a high level waste tank. He pointed out SRS has been trying to close tanks since 1988. Mr. Lawless and Mr. Anderson explained what an extraordinary step this is. No other country, that we know of, has accomplished this. In addition, an Environmental Assessment and a Closure Plan were written and approved; and DHEC, EPA, and the NRC are all on board. Mr. Lawless praised the DOE and their response to the CAB's motions and suggestions. Mr. Anderson pointed out that much of the delay is due to the required approval processes and the regulations. Mr. Lawless pointed out how all of the agencies have worked together to make this happen.

Mr. Lawless re-emphasized the importance of getting out of the old-style tanks. Mr. Anderson reiterated the schedule and history:

- Out of old style tanks by 2006
- No more waste tanks are to be built. This commitment was made in the 80's.

- DWPF was evaluated in an EIS and a SEIS
- Some Waste removed from the old Style tanks to the new style tanks
- Closure and final disposition of old style tanks
- Most proud of the effort of regulators and public working together and doing this in a year

Mr. Zimmerman asked who performed the risk analysis. Mr. Anderson stated agencies both within Westinghouse and outside. Mr. Zimmerman asked if this technology was of DOE origin. Mr. Anderson responded positively. DOE has looked at other technologies, primarily French and British. However, they use stainless steel tanks and have less volume; whereas SRS uses carbon steel tanks and has more waste.

Mr. Lawless questioned the possibility of disposing of saltstone in the HLW tanks before closure. Mr. Anderson stated this idea has been studied but tanks are not an optimal disposal for saltstone for several reasons, with the primary reason being potential permitting issues with regulators. However, SRS will continue to look at that and any other new alternatives designed over the years as possibilities.

Mr. Anderson proceeded to discuss a possible alternative to Saltstone- - the new engineered landfills at a cost of 3-5 million as compared to 20 million for the present concrete vaults. These new landfills would give the same amount of protection to the environment with flexible membrane liners, a leachate collection system, engineered caps, and monitoring wells. The conceptual design is still preliminary.

Mr. Belge questioned the durability of the flexible membrane liners and their contact with chlorides which would tend to make the liner brittle. Mr. Anderson emphasized that many types of membranes are being tested and evaluated for strength, flexibility, and durability.

Mr. Minot questioned the transportation modes for the grout. Mr. Anderson pointed out that each study and plan have looked at transportation questions. Mr. Lawless asked if the reactors and canyons had been considered for disposal, Mr. Anderson answered that in fact they had. Tony Towns reminded the group that if the solid waste disposal design is changed, then public opinion and comment must be obtained because of permitting issues.

Mr. Lawless then took this opportunity to review the questions that had come up during the meeting:

- What will the interactions of the fluorides and nitrates be?
- What chemical reactions will take place between the bladder material and the grout?
- How does this bladder material react in tests and in similar situations?
- Can this material go into high level waste tanks and D&D facilities?
- What will the final product look like in a 1000 years?
- If SRS relocates the waste disposal, how will the transportation issue be handled?
- What is the closure cost per saltstone vault (after it is pumped full of cement)?
- What would the escalated operational cost be?

Mr. Lawless requested these questions be documented and answered .

Mr. Anderson then briefly touched on the other HLW issues. They are as follows: (Last slide)

"The Way we would like it to be"

- 300 canisters per year
- Closing 2-3 tanks per year
- 10 fold reduction in DWPF recycle to tank farm
- 10 fold reduction in waste form for LLW disposal
- 10 fold reduction in water volume for sludge
- Washing process
- Minimal water addition to tanks for waste removal
- "Tool box" of proven waste removal methods
- CIF processing waste from other DOE sites

Mr. Anderson pointed out That DOE-HQ had requested each site do a 10- year plan. SR's Revision 7 of the High Level Waste Sytem Plan is coming out soon, and will be consistent with this 10-year plan.

Mr. Minot asked why 410 canister/year could not be poured as opposed to 300. Mr. Anderson answered that SRS had examined these scenarios and had answered them in the ten year plan.

Mr. Anderson reemphasized that DOE-SR's ultimate goals are waste removed from tanks, vitrified waste, more waste in fewer canisters, and final storage at a Federal repository.

Mr. Lawless informed the group that the September 10, 1996, meeting in Beech Island, South Carolina will include discussions of CIF and the fish advisory. He then requested that the attendees send in ideas for a motion (see attached).

Mr. Lawless then closed the meeting and thanked those attending.

Meeting handouts may be obtained by calling the SRS CAB toll free number at 1-800-249-8155.