



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

Environmental Remediation &  
Waste Management Subcommittee

**Meeting Summary**  
**November 13, 1995**  
**Augusta, Ga.**

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The SRS CAB's Environmental Remediation and Waste Management (ER&WM) Subcommittee met on November 13, 1995, at 5:00 at the Partridge Inn, in Augusta, Georgia. Bill Lawless and Kathryn May, Co-chairs of the Subcommittee, opened the meeting with introductions. CAB representatives present included Mr. Lawless and Kathryn May. Representatives from the Department of Energy (DOE-SR) included Karen L. Poore, Charlie Anderson, (High Level Waste) and Dale Ormond (Solid Waste); and from Westinghouse Savannah River Company (WSRC) Kelly Way (HLW) and Joseph D'Amelio (SW). Ed Berkey, Chairman of the Independent Scientific Peer Review Committee, was present to review the Transuranic (TRU) Waste Retrieval Project findings. Lee Poe attended as a member of the public. Karen Poore was the Associate Designated Deputy Federal Official.

Tentative plans were made to discuss the E-area vaults at the next subcommittee meeting. Lee Poe raised several issues about public safety, funding, and residential vs. industrial standards concerning the vaults that he would like to see discussed at the next meeting. The next subcommittee meeting is tentatively planned for December 5 or 7, 1995.

Mr. Lawless welcomed the attendees, announced the meeting agenda for the evening, and turned the meeting over to Ed Berkey to present a Review of the SRS TRU Waste Retrieval Project, (see attached slides). Dr. Berkey pointed out this presentation is a preliminary recommendation to DOE and WSRC and a more formal presentation is planned for the CAB meeting on the 28th.

The Independent Scientific Peer Review (ISPR) Team was formed in response to the CAB's recommendation to form a committee to study the issues and present results to this ER&WM subcommittee. The issues involved proceeding with the planned TRU waste retrieval project or waiting until a treatment technology is available. Tonight's report presents the results of the ISPR research and study.

Dr. Berkey introduced Joe D'Amelio to present background and history of the TRU Waste pads and the present situation. Mr. D'Amelio explained that there are 19 TRU Waste pads sitting out in the Solid Waste Disposal facility. There are three different areas that basically represent three distinct phases of storage; Pads 1-6, Pads 7-13, and Pads 14-19.

Retrieval is focused on pads 2-6. Pad 1 is excluded from retrieval because it contains no 55 gallon drums sitting directly on the pad, but contains all culvert waste. Pads 2-6 were built in the early 70's/ mid 80's. Pads 1-5 are mounded over with a 4-foot soil cover. When the Waste Isolation Pilot Plant (WIPP) was scheduled to open in 1988, SRS placed soil only on the sides of the waste on Pad 6. There are no 55-gallon drums sitting on pads 7-13. Problems with rainwater intrusion into SRS drums led SRS to a different storage mode, illustrated by pads 14-19.

Pads 2-6 consist of basically a concrete pad 60 wide by 150 feet long. As waste arrived in different storage containers, it would be put on a pad. When the pad was full, it would be covered with a foot of soil, which would be covered with a PVC tarp, which would then be covered with three more feet of soil.

Drums containing greater than half a curie of radioactivity per drum are placed in concrete containers called culverts; whereas low activity drums sit directly on the pad. 14 drums are stacked in the culvert, two drums high. The maximum number of alpha curies allowed in the culverts is 1250. The project consists of retrieving only these low activity drums from the pads. There are 8800 of those drums sitting on pads 2-6.

The storage system places the higher activity waste containers on the pad center and the low activity waste drums on the pad perimeter; therefore, all drums to be retrieved per this project sit on the perimeter of the pads. Each of the pads is sloped to the center and contains sumps that are monitored weekly. No contamination has been found. In the late 70's, contamination on a fiber glass container was detected resulting in the removal of all fiberglass containers.

Some of the drums are painted; some are galvanized. There is a plastic liner in each drum and each drum has its own lid. All drums involved in this retrieval project are un-vented, presenting the potential of hydrogen gas buildup.

Pad 6 contains the drums that would be retrieved first in the project. A soil cover was never put over the top of the drums. The drums can be seen around the perimeter and should be the easiest to retrieve. Once Pad 6 is completed, then Pad 4 drums will be retrieved.

The "second storage phase" 55-gallon drums on Pads 7-13 have all been removed and are now under weather cover. These drums were removed because they had been set out in the rain and, because they were vented, took in rainwater. The water has since been removed and the drums have been placed on weather covered pads, -- 4 drums to a pallet; 3 pallets/drums high.

Retrieval plans involve excavating the soil away from the pad and leaving 6 inches on top of the waste containers. The last six inches would be removed by hand excavation as work moved down the pad, in a contamination controlled environment. The structure would protect the mound from the elements.

Forklifts working on each side of the pad would pull the 55-gallon drums off the pad and place each drum inside a larger drum. That drum would be taken to the vent and purge machine which drills into the 55-gallon drum lid and pulls a sample to test for hydrogen. If there is a significant amount of hydrogen, the entire drum is purged by introducing nitrogen to remove the hydrogen.

Mr. Poe and Mr. Lawless questioned the sample process and drill bit type. Mr. D'Amelio and Mr. Ormond pointed out that numerous tests and studies had been done to select the drill bit best suited for this type of sample extraction. Basically, the drill bit is sealed around the top of the drum and sits in a vacuum chamber, allowing a vacuum to form on the cylinder once a sample is pulled. A 3/4 inch filter is attached directly to the top of the drill bit. The bit itself is hollow and contains a series of holes that allows a sample to be pulled once the drum's liner has been penetrated. The intent is to penetrate the 55-gallon drum and liner without disturbing the waste, which sits inside a plastic bag.

Mr. Poe voiced concern over the possibility of a potential release if a drum and drum liner were encountered in this process that had lost their integrity. Mr. D'Amelio pointed out that the intent is to move that drum not more than 3 or 4 feet in order to overpack it. A Safety Analysis Study done on the retrieval of the drums concluded that on and off site dispersal of radioactivity would remain under acceptable risk criteria.

Mr. Poe voiced concern about potential weather problems, such as tornadoes. Mr. D'Amelio noted the weather covers can withstand 100 mph winds, but not tornado winds. Tornado netting was used at one time, but accident analysis demonstrated tornado netting was not needed. Dispersion models demonstrated that any offsite release from the drums would be insignificant and would not jeopardize the public.

Mr. Poe raised another safety concern regarding a culvert fire. Mr. D'Amelio and Mr. Ormond pointed out that there is no safety issue as long as the top remains on the culvert. In addition, it would be almost impossible for a fire to be started in the first place.

Dr. Berkey then reviewed the pertinent facts (see attached slides) and emphasized that only the drums (no culverts) on the oldest pads in which some soil cover has been applied would be retrieved.

Dr. Berkey also pointed out that the members of the ISPR committee were well qualified and knowledgeable about retrieval projects. The team followed specific procedures, reviewed documents, such as the Site Treatment Plan (STP), listened to SRS personnel presentations, and compared the SRS retrieval project with other comparable site projects. Discussion among these committee members and other committees was ongoing.

Retrieval Project Construction is slated to start in late April or early May 1996. The drums are 50 mils thick and have a projected life span (based on developed models) under soil and exposed to water of 20 years on the average, which would have been 1994. Corrosion, of course, is not systematic; therefore, the data shows a wide swing of corrosion rate variations. Pinholes or partial corrosion may exist that would compromise the structural integrity of the drum. Moving drums is also a problem. Even though there is no evidence of leakage at this time, the drums are deteriorating daily.

Mr. Lawless pointed out the CAB's desire to alleviate this problem and asked about Pu 238. Mr. Ormond pointed out that Pu 238 will encounter a different fate. The waste slated for this retrieval

project is Pu 239 or job control waste from SRS processing lines. Due to management policy at the time, because these drums came out of a TRU area they were labeled as TRU waste.

Dr. Berkey reemphasized that possible treatment technologies will not be available for at least 10-14 years. The life span of the drums is 20 years, therefore, in ten years some drums will be 31 years old. There are attempts in DOE to speed things up and the CAB is a much needed catalyst to aid this process.

When questioned about Organic and TRU waste treatment, Mr. Ormond noted that there is another peer review team headed by focus groups in the Office of Technology Development studying organic and TRU waste treatment processes . One group is studying thermal treatment while another group is considering non-thermal treatment. All of SRS's Pu 238 must be treated. SRS is working with WIPP to incorporate designs and develop a treatment process before shipping.

Mr. Poe questioned if risks increased with time and if the retrieval project costs increased with schedule delays. Mr. D'Amelio cited several other examples in which sites performing similar projects were met with much increased costs as compared with the SRS projected costs for this project. For example, Los Alamos found one pinhole in one drum and is now required by the regulators to retrieve all of the drums. In Idaho, retrieval must be done remotely. Remote handling is much more expensive than the method SRS proposes. Similarly, if we wait for 10 more years, the risk in handling the drums will increase 300%. Mr. D'Amelio also noted that the workers retrieving the wastes will be exposed to greater risks each day the schedule slips.

Charlie Anderson then provided the subcommittee with basically a quick dry run of the presentation planned for the November 27, 1995, ER & WM Subcommittee meeting and the full CAB meeting on the 28th. Since the subcommittee has seen, approved, and commented on this presentation during a previous subcommittee meeting, Mr. Anderson was able to proceed quickly through the slides (see attached).

The first presentation of three was entitled "The HLW System Status & Challenges" which contained the following slides:

- Outline
- HLW System -- explanation of the facilities that make up the entire system
- HLW System Schedule
- HLW System Status slide
- HLW System Funding-- illustration of the funding challenge
- Meeting the Challenge

After the slides had been shown, Mr. Lawless presented the CAB's draft Motion 1, which was developed after studying the above presentation and determining the role the CAB could take in this situation.

Mr. Poe asked for a further explanation regarding the present challenges. Mr. Anderson pointed out that the current level of funding provides a challenge that DOE and WSRC are committed to

meeting by managing the budget better and smarter and incorporating new technologies and efficiencies.

Mr. Lawless requested assurance that the Department would meet the 2028 commitment date to have the tanks cleaned, even if funding is dropped again in the outyear. Mr. Anderson pointed out the dramatic improvements outlined in the new HLW System Plan Revision 6 and the DOE's firm commitment. Mr. Lawless presented the CAB's draft Motion 1. After discussion of Mr. Poe's question regarding the need for an independent scientific peer review vs. a regular DOE review of the DWPF, verbiage clarification, and minor changes, the subcommittee members and public agreed on the main Motion 1 premise (see attached).

Mr. Anderson quickly presented the next item of interest to the CAB: "Additional Glass Waste Storage Buildings" which contained the following slides:

- Outline
- Existing Storage Building Description
- Existing Storage Building Design
- Graphic of the Glass Waste Storage Building
- Future Storage Building Plans

After the overview, Mr. Lawless presented the CAB's draft Motions 2 & 3, developed after studying the above presentation and determining the role the CAB could take in this situation.

Mr. Poe emphasized that he wants all HLW removed from SRS by the year 2028, and taken to a Federal repository. Also, the motion must be as positive and straightforward as possible. After brief discussion of Mr. Poe's concern of a federal repository, verbiage clarification, and minor changes, the subcommittee members and public agreed on the main premise of Motions 2 & 3.(see attached)

After Mr. Anderson's Overview of the HLW Re-Engineering Effort, Mr. Lawless presented the CAB's draft Motion 4 (see attached). Mr. Lawless requested pictures of Tank 16, Tank 19, and Tank 41 and a slide showing the four types of tanks be added to the November 27 and 28th presentations.

Mr. Poe noted that in 2028, all current inventory of waste is to be removed from the tanks and that all of the old style tanks are to be declared ready for closure. Mr. Anderson pointed out that discussion is underway to determine when this issue transitions from a Waste Management concern to a Decontamination & Decommissioning/Environmental Restoration concern.

Mr. Poe noted the urgency in addressing these issues near term. The CAB and SRS can not afford to wait until new problems present themselves in the closure of the tanks. Mr. Lawless and Mr. Anderson agreed that the motion should portray the urgency of developing a closure criteria and of closing the tanks as soon as possible after they are cleaned.

Mr. Poe suggested wording similar to "closure should be completed 2-5 years from cessation of operations of any one tank ." Mr. Lawless suggested "closure of the first tank demonstrated in

2005." Mr. Poe noted it may be difficult to calculate the exact date but the strategic plan should show a closure schedule. After verbiage clarification and minor changes, the subcommittee members and public agreed on the main Motion 4 premise (see attached).

Mr. Lawless presented and discussed the "non-issues related" Motion 5 which involves including the CAB in celebrating the pouring of the first radioactive canister at DWPF. After minor changes and clarification, the subcommittee members and public agreed on the main premise of Motion 5 (see attached).

Mr. Lawless then closed the meeting and thanked those attending. The next meeting of this subcommittee to discuss HLW issues and the presentation to the full CAB of these 5 HLW related motions will be November 27-28, 1995.

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