



SRS Citizen's Advisory Board

SRS Citizens Advisory Board

Waste Management Committee

**Aiken Federal Building
Aiken, SC**

April 17, 2003

The SRS Citizens Advisory Board (CAB) Waste Management Committee (WMC) met on Thursday, April 17, 2003, at the Federal Building, Aiken, SC. The purposes of the meeting were to discuss the Solid Waste Annual Report, Tank 19 Closure Module, Tier 1, Waste on Wheels, and to receive public comment.

Attendance was as follows:

CAB Members

Bill Willoughby
Harold Rahn
Murray Riley
Bill Lawless
William Lawrence
Gerald Devitt

Stakeholders

Lee Poe
Mike French
Bill McDonell
Rick McLeod*

DOE/Contractors

Joe Carter, WSRC
Julie Petersen, DOE
Sonny Goldston, BNFL-SW
James Hamilton, WSRC
Teresa Haas, WSRC
Kelly Way, WSRC
Mike Johnson, WSRC
Gerri Flemming, DOE
Kim Hauer, WSRC
George Mishra, DOE

Regulators

Bill Krecker, DHEC

*CAB Technical Advisor
-WM committee members

Bill Willoughby welcomed those in attendance and asked for introductions.

Sonny Goldston, SW Division, BNFL

Mr. Goldston provided a copy of the ***Solid Waste Annual Report*** to everyone in attendance. He pointed out various pages of interest to the committee, including the low level waste inventory chart. He added that the CAB's work helped to lower that inventory.

Mr. Willoughby stated that the WM Committee had planned to draft several recommendations. His view was to have the Savannah River recommendations work in parallel to the recommendations written in Carlsbad at the Site Specific Advisory Board meetings. He asked Mr. Goldston to talk about TRU waste and the recommendations discussed in Carlsbad.

Mr. Goldston stated that SRS is shipping TRU waste to the Waste Isolation Pilot Plant (WIPP). Mr. Goldston described various activities required to ready a shipment. First, the site would have

to develop "Acceptable Knowledge" data packages for every waste stream. Next, the SW project group would have to do a headspace gas analysis, x-ray interrogation and a non-destructive assay. If a "prohibitive item" were found, it would have to be removed. SR does not have the facilities to do this at a fast rate or for certain types of material. The WIPP Permit is a New Mexico (state) permit. In order to change the permit, the state would have to go through a series of public meetings and a public comment period. He added that the prohibitive item might be a Department of Transportation (DOT) requirement instead of DOE requirement

Mr. Goldston pointed out the role that the CAB played in accelerating TRU waste shipments. He stated that because the site was able to bring in the Mound waste and mobile vendors, twice as much TRU has been shipped out as the site has shipped in. The site has accelerated from 12 shipments a year to 12 a month, and is trying to accelerate the finish date from 2034 to 2014. This is all legacy TRU waste that is in storage. It is low and high activity. SR has not shipped any high activity waste yet. At this point, SR has shipped more waste to WIPP than we expected to ship until 2006. He added what a tremendous accomplishment this is.

Mr. Goldston outlined some of the challenges facing the SW division. One is the "prohibitive item" restriction. The prohibitive item definition is very restrictive, and SR would like for DOE and Carlsbad to re-evaluate the prohibitive items list. SR just undertook the first removal of prohibitive items. The process requires that several drums are opened and the waste removed to verify the x-ray interrogation. It took four people four hours to remove an aerosol can. He added that about 40% of SR cans would have to be opened because they have prohibitive items, and SR has opened 10% of the containers to verify the x-rays. Upon opening the drums, SR has discovered that the x-ray interrogation has been correct in every case.

Mr. Goldston continued. SR doesn't have the facilities necessary to open large containers, and we must store them until we have the necessary facilities. The site has 108 large boxes. Inside of these boxes are plywood boxes and some remote manipulator sleeves. SW does not want to open these boxes, remove the items, and repack them in another shipping container. These bulk containers can't be shipped in a TRUPACT II. There is currently under development a "TRUPACT III" that would enable SR to ship these big boxes. If SR can get relief on opening these boxes to verify the x-ray, then SR can put these big boxes in a TRUPACT III and ship them. The licensing is currently being prepared. We need to accelerate the schedule for TRU Pact III.

Mr. Poe asked if SR had evaluated workers' risk in opening the containers. He asked if there were documentation that stated the risk of exposing workers to contamination by opening these various containers. He suggested a comparison of this risk with the risk of leaving the item in the containers and storing the containers in a repository.

Mr. Goldston stated that SR couldn't continue to use the existing visual exam facility to sort and segregate because the rates of segregation are too low. He showed a picture of the Los Alamos National Lab (LANL) glovebox that will increase the rates. The glovebox will replace HandSS 55, which would not work for SR because it was too complex and did not meet the SRS schedule. Mr. Goldston showed pictures and diagrams of the LANL glovebox described the process to the committee.

Next, Mr. Goldston discussed the high activity TRU Pu-238 challenge. SR needs an "ArrowPak" shipping container for high activity drums to mitigate the hydrogen concerns. There are very strict limits for PU amounts that can be shipped. The ArrowPak high-density polyethylene container is designed to withstand the design basis deflagration. Arrowpak allows pressure waves from deflagration, and it won't rupture. Therefore, there is no worry about an hydrogen/oxygen explosion. SR needs the ArrowPak to ship the 55-gallon drums. The ArrowPak is a containment vessel.

Mr. Goldston mentioned that two "hubs" are being established in the US for sites to ship waste. SR is on the list as a possible Eastern Hub. Currently, SR is receiving from Mound, but from nowhere else.

Mr. Willoughby issued a summary of the recommendations drafted in Carlsbad. Mr. Willoughby stated that he believes the most important issue is for Savannah River to get away from opening 40% of the drums. He said SR should compare the risk of having the prohibitive to the risk of opening the drums. He stated that it is appropriate for the CAB to suggest that risk mitigation is evaluated and a risk-based analysis is done to compare the hazard of shipping and disposal to the hazard of opening a container.

The committee took some time to discuss the recommendations from Carlsbad that would affect/pertain to Savannah River. The worker safety issues of opening the containers seem to be the most important. If a waiver could be written, the LANL gloveboxes may be unnecessary.

After much discussion, the committee suggested Mr. McLeod take the information and draft two motions for the group to discuss.

1. Evaluate the risk of removing prohibited items from waste containers vs. risk of WIPP/transportation system acceptance of these items.
2. Evaluate the need for transportation containers for large waste boxes and high activity drums (TRUPACT III, ArrowPak)

Larry Ling, High Level Waste, DOE

Mr. Ling updated the committee on the status of the documents that affect the closure of Tank 19. He pointed out that the General Closure Plan, which has already been approved by the South Carolina Department of Health and Environmental Controls (SCDHEC) is only part of the DOE Order 435.1 Tier 1 Closure Plan. The Tier 1 Closure Plan also includes the following:

- Closure Plan & Performance Assessment for F-and H- Area High-Level Waste Tank Systems
- Savannah River Site High-Level Waste Tank Closure Environmental Impact Statement
- High-Level Waste Tank Closure Program Plan
- Sampling Analysis and Characterization Plan to Support Tank 19 Closure and the Maintenance Program for E-Area and Saltstone vaults

Mr. Ling added that the Tier 1 Plan is currently at Headquarters awaiting approval by the Assistant Secretary for Environmental Management (EM-1). The proverbial "bottom line" is that

the approval is pending the outcome of litigation scheduled for June 20, 2003. There is a possibility that the Office of the General Counsel (GC-1) will recommend to Jessie Roberson (EM-1) to withhold approval of the Closure Plan until the Court renders a decision.

The approval of the Tank 19 Waste Incidental to Reprocessing (WIR) and the Tank 19 Closure Module are also pending the outcome of the oral arguments for the DOE Order 435.1 litigation (June 20). The Natural Resources Defense Council (NRDC) also makes arguments that same day. DOE should hear something by July as the Judge of record typically rules within a month of hearing the oral arguments.

Mr. Ling explained that the DOE Order 435.1 has been implemented since July 1999. This lawsuit is in respect to the order. The NRDC claims DOE is violating the Nuclear Waste Policy Act (NWPA) by leaving waste in the tank and then trying to reclassify that waste by labeling it "incidental". NRDC has challenged DOE's authority to classify waste as WIR. The NRDC also considers that DOE Order 435.1 has no limits on what the DOE can classify as being non-HLW.

When questioned about the two closed tanks, Mr. Ling stated that those were closed in 1997, before the Order was implemented in 1999 and that the NRDC has not yet challenged those closures.

Mr. Ling continued. SRS is still preparing sludge and removing waste. However, no tank will be closed until the lawsuit is settled. The National Governor's Association is working on an understanding between the involved states. SCDHEC is keeping abreast of what DOE is doing. SCDHEC's position is that they agree with NRDC on some points. They agree that DOE must follow the NWPA. He added that closure preparations for Tank 19 continue, but actual closure is subject to the outcome of the DOE order 435.1 litigation.

Neil Davis, Closure Business Unit, WSRC

Mr. Davis explained accelerated sludge removal a.k.a Waste on Wheels (WOW) to the committee. He gave some background and history for the new members that were present. He stated that the cost to take an active sludge tank and prepare it for closure is about \$30 million. 23 of the 49 high level waste tanks require sludge removal. SR is planning to remove hot (highly radioactive) sludge from tanks much quicker. Ten tanks may require heel removal to less than 1,000 gallons of residual waste, and nine of the tanks may require waste removal from the annulus as well.

Mr. Davis explained the two-year Systems Engineering Evaluation System used to identify new technologies that would remove waste at a significant cost reduction. Tank 5 will be the first sludge tank to deploy all of the WOW cost savings alternatives. Tank 5 has some of the hottest sludge in terms of radioactivity.

Mr. Davis illustrated the process with pictures, drawings, and diagrams. He contrasted the old system of preparing/transferring bulk sludge, preparing/transferring the heel, water washing, and preparing/transferring annulus waste with the new WOW method.

At the moment, Tank 5 is the only tank approved for WOW. SR envisions success with Tank 5 and plans to then move from Tank 5 to Tank 6 then to Tank 8. SR has only done one bulk batch removal in Tank 8, so there is still 14,000 gallons of sludge in there. SR plans to take the heel down as far as possible without using additional water and using the slurry pumps. After the equipment has gotten out as much waste as possible, SR will look at an acid washing that is compatible with vitrification process. The goal is to partially dissolve the sludge. For the undissolvable sludge, the goal is to break it up to make it easier to pump out of the tank and neutralize the material in a separate tank.

Mr. Davis explained the Authorization Basis Concept. He would like to reduce the waste to a certain level that would not require the number of safety analyses that are now required. Mr. Davis hopes Tank 19 will no longer be governed by the AB. The AB assumes that SR will be removing waste forever, and Mr. Davis believes that SR can remove the waste in approximately two months. He wants to base the AB on the time that the material is at risk, which he calls a "time at risk" argument vs. a "material at risk" argument. Also, SR would have to change the AB to add acid cleaning.

Mr. Davis explained the organization concept. There would be a separate work group from the tank farms. The WOW group performs specialized, repetitive tasks and moves from tank to tank.

Mr. Davis summarized the advantages to WOW over the present baseline. WOW will eliminate significant infrastructure, it will reduce obsolete equipment, reduce radiation exposure, reduce facility outages, reduce design costs, and reduce required instrumentation.

When asked by Mr. Lawless for cost savings, Mr. Davis responded that SR would save somewhere between 35% and 85%; however, WOW has not been implemented yet and a better estimate is not available at this time. Over the long term, cost savings could reach hundreds of millions. Mr. Johnson added that the speed to which SR can empty these tanks, contributes to the lowered risk to the worker and the environment. Mr. Davis stated that this process saves probably two and a half years of time. He added that Mr. Hauer's group would prepare the next tank while Mr. Davis's group is removing the waste from the current tank. In the past, each tank was done in a stand-alone fashion.

Mr. Willoughby asked about salt removal. Mr. Davis replied that another group removes the salt from the tanks. Then, Mr. Davis would remove the heel. He added that he has plenty of work with 23 tanks requiring sludge removal. Mr. McLeod asked about permitting problems or roadblocks, to which Mr. Davis responded that he is working toward the current requirements.

The Committee discussed a motion for expediting tank cleanout, tabled one for the evaporator closure (negligible risk) considered a letter of commendation for WOW, and extended the WOW recommendation to include tank annuli. The committee asked Mr. Davis and Mr. Ling to provide resources and asked Mr. McLeod to draft a motion dealing with these issues.

ACTION**

Mr. Lawless wants background information on recommendations about TRU and WIPP that have been passed and the responses to them.

**Check on recommendations concerning waste removal.

**Mr. McLeod to draft motions.

Mr. Willoughby thanked everyone and adjourned the meeting at 8:00