



SRS Citizens Advisory Board

Environmental Remediation & Waste Management Subcommittee

**Meeting Record
November 3, 1997**

The CAB ER&WM subcommittee met on November 3, 1997 at the Ramada Plaza Hotel in Augusta, GA. A Savannah River Laboratory (SRL) Seepage Basin Focus Group follow-up and discussion meeting was held in conjunction with the CAB ER&WM subcommittee meeting on November 3. Bill Lawless opened with introductions. CAB members present included, ER&WM subcommittee Co-Chairs Bill Lawless and Kathryn May and CAB member Karen Patterson. Todd Crawford, technical consultant to the CAB also attended. Attending from DOE-SR were Cynthia Anderson, Brian Hennessey, Mike Simmons, Bill Pearson, Virginia Kay, and Gary Little. Attending from the U.S. Environmental Protection Agency (EPA) were Jeff Crane, Constance Jones and Ken Feely. Craig Marriner and Keith Collinworth attended from the South Carolina Department of Health and Environmental Control (SCDHEC). Attending from WSRC/BSRI/BNFL were Welford T. (Sonny) Goldston, Peter Hudson, Dale Bignell, Joseph D'Amelio, Paul Huber, Chris Bergren, Ron Socha, Gerry Stejskal, Anne Roe, and Helen Villazor. Public attendees included Mike French, Sam Booher, Gerald DeVitt, Bill McDonell, John Meyers and Patricia McCracken. Virginia Kay attended as the Associate Designated Deputy Federal Official (ADDFO).

Mike Simmons reviewed the current status of the Savannah River Laboratory (SRL) Seepage Basins, including the previous updates with the focus group and showed photographs of the basins as they are since the vegetation has been cut, chipped and placed in the bottom of the basins.

Paul Huber presented a table showing the determined Contaminants of Concern (COC) from the characterization and data reduction efforts that will establish the basis and goals for the remedy (all information discussed was draft as the document work was still in progress). He explained the contaminant distribution within the basins and between the basins were consistent with the basic functioning of an settling and overflow basin operation. He discussed the Human Health (HH) contaminants and the ecological contaminants. The only ecological contaminant of concern was chromium in basin 1. The HH contaminants of concern were mainly radionuclides including various uranium isotopes, strontium-90; plutonium-238/239; cesium-137; cobalt-60; cerium-243/244; actinium-228; americium-241; and curium-243/244. He further stated that approximately 90% of the contaminants were contained in the 0-1 foot soil level of basins 1 and 2. He noted this was because the 0-1 foot level of basin soils has a greatly more concentrated level of contaminants than the soils further below the one-foot level and in basins 3 and 4. He

also noted that since the overflow basins were designed to tier into each successive basin, the first two basins had received the greatest amount of contaminants. Mr. Huber noted that Contaminant Migration Contaminants of Concern (CM COCs) would be those that would migrate to the groundwater and at a level greater than either a risk-based criteria or a maximum contaminant level within a period of 1,000 years. The modeling work performed on the contaminants within the basin found that no contaminants would become CMCOCs. Therefore the groundwater would not be a concern in remediation of the basins. It was noted, however, that the ground water below the basins is under remediation for volatile organic contaminants under a RCRA permit requirement and were sourced from other than the basins.

The SRL Seepage Basins cost differential between in-situ and ex-situ treatment was reviewed. Mr. Huber noted that the preliminary cost evaluations had not shown a significant dollar cost between in-situ and ex-situ treatments. This was largely effected by a few basic factors. First, much of the work for either option has the same steps and therefore the same cost. Second, there were no contaminants identified requiring an a soil stabilization for the in situ case. Third, the amount of estimated volume expected to be removed for the ex situ case was minimal in comparison to the full scope of closing the basins. Further, the disposal cost (using a case of disposal in the engineered trenches on SRS) had a reasonable excavate, transport, and disposal unit rate cost. This resulted in the cost for ex situ to be near equal to the cost for in situ. This analysis was based upon data that is still being reviewed for completeness, but is expected to be a fair representation of what will be finally stated in the finished report.

Mr. Huber reviewed a schematic cross section of the basins showing one remedial option of removing one foot of contaminated soils from basins 1 and 2 and the top portion of the berm walls between the basins. Then the basins would be backfilled with an structural grade backfill and reseeded with grass. Bill Lawless asked what contaminants would remain after removing that portion of the contaminated soils. Mr. Huber said that significantly lesser concentrations of the respective COCs would be left. The residual risk determining material remaining would principally be from the cesium-137 and some plutonium. About 10% of the contaminants would remain under this plan and they would be very widely dispersed over the entire footprint of all four basins. Sam Booher asked if they had considered removing 1 and 1/2 feet of soils from basins 1 and 2 and also removing 6 inches of soils from basins 3 and 4. Mr. Huber said that since the area of basins 3 and 4 were an order of magnitude larger than the area of basins 1 and 2 and their respective contribution to the total contamination was proportionately low, removing soils from basins 3 and 4 yielded no significant lowering of overall risk. Additionally, the cost for removing this much larger quantity of soil amounted to a substantial increase in total cost.

Mr. Huber explained that since the cost difference between in-situ and ex-situ treatment was not significant that other factors would need to be considered in weighing the remedial options. Mr. Huber noted one advantage of ex-situ would be freeing up the area for future development, if needed, to support new missions. Keith Collinworth pointed out that from a regulatory standpoint there was interest in reducing the footprint of contamination at the site. He said that all things being equal the State would prefer to reduce contamination at an area such as SRL because it reduces the amount of area that the State has to monitor and manage in the future. Bill Lawless noted the CAB was primarily interested in controlling costs and if there was not a significant cost difference then the CAB would agree and support the ex-situ option. Mr.

Collinsworth noted that if ex-situ treatment were chosen there were several options for disposing the contaminated soils. These options included adding the SRL soils to other basin closures in the interior portion of the SRS or using existing disposal trenches. Paul Huber noted that the space availability and contaminant loading limits of other basin closures may be a limiting factor. Mr. Collinsworth said the contaminated soils could be divided between two or more basins that were also being remediated. Bill Lawless noted that in a previous motion the CAB had recommended looking into using the High Level Waste (HLW) tanks which were being closed to dispose of the contaminated soils as a component of the grout.

Sam Booher asked about using a clay cap as a cover. Mr. Huber said that if the in-situ option was chosen it would not require a clay cap or stabilization of the contaminated soils because modeling had shown there were no contaminants that would migrate to the groundwater. He said in the ex-situ case they would want to select a backfill material of a structural grade so that future construction foundation requirements would be compatible. The transmissivity rates for such material would be close to that for a clay cap in any case.

Bill Lawless closed the SRL Seepage Basins Focus Group follow-up portion of the meeting and invited everyone to return for the CAB ER & WW subcommittee meeting to discuss the draft motion on the SRL Seepage Basins. When the assembly readjourned, Bill Lawless asked for public comments. No public comments were offered.

The SRL Seepage Basins draft motion listed both the in-situ and ex-situ treatment alternatives. A discussion of the motion followed concerning the motion timing and the need for the motion. In light of the previous discussion it was decided to table the motion for the present and wait until the remediation documents were released and reviewed before taking any further action. The remediation documents, (Rev. 0 Combined Document (Remedial Investigation/ RCRA Facility Investigation (RI/RFI), Baseline Risk Assessment (BRA), Corrective Measures Study/Feasibility Study, (CMS/FS)) and the Rev. 0 Statement of Basis/Proposed Plan), will be completed on December 3. Bill Lawless asked Paul Huber and Mike Simmons to brief the subcommittee on the documents in January and asked Jeff Crane and Keith Collinsworth to brief the subcommittee on their review of the documents in February before completion of the proposed plan and in March after approval of the proposed plan.

Bill Lawless introduced Sonny Goldston who provided a brief overview of the Environmental Management Integration (EMI) program and said that the CAB ER&WM Subcommittee had been previously briefed on mixed, transuranic (TRU), and low-level wastes (LLW) and the use of the Consolidated Incineration Facility (CIF). Mr. Goldston noted that two EMI draft motions have been prepared and previously presented to the CAB at the full Board meeting in September 1997. However, there was not a quorum of CAB members present at the full Board meeting for voting purposes.

Mr. Goldston said some of the benefits of EMI for the SRS and the DOE complex include shipping treated mixed waste to Hanford, WA for disposal, shipping low-level mixed alpha (TRU) waste to Idaho for treatment, using existing DOE Complex incinerators such as CIF at SRS to treat waste from DOE complex sites and shipping LLW to the Nevada Test Site for disposal. Mr. Goldston also discussed several benefits of the EMI recommendations on high-

level waste (HLW) to SRS and the DOE complex, which include accelerated completion of high-level waste vitrification by six years (HLW System Plan, copies are available) and shipment of HLW canisters from SRS to a federal repository scheduled to start in 2015 (HLW System Plan). The Federal Repository Systems Performance Assessment reflects spent fuel surrounded by SRS HLW canisters. This indicates that HLW canisters are required for the repository performance and shows DOE 's placing the SRS HLW canisters in the repository. Mr. Goldston noted that the repository would also require an NRC license and the performance assessment is a requirement of that process.

Mr. Goldston introduced Bill Pearson, DOE-SR, who provided a presentation on the benefits, savings, and logistics of shipping West Valley vitrified HLW to SRS for interim storage. Mr. Pearson pointed out that taxpayers could save \$650M if the canisters were shipped to SRS, the DOE HLW mission at West Valley would be completed in 2004, and the increase of canisters to SRS would amount to a 6% increase in canisters at SRS (300 West Valley canisters versus 5900 SRS canisters). (Copies of the West Valley HLW Alternatives Evaluation Report are available*). Mr. Pearson also explained that SRS could start building a canister shipping and receiving facility by 13 years earlier, starting in 1998 at a cost of \$23M and the Glass Waste Storage Building #2 by 18 months earlier. SRS unloading operations would cost ~\$1M per year.

Mr. Pearson referred to the EMI Team Charter which includes solutions that cross traditional site boundaries for accelerated cleanup, the involvement of stakeholders in reaching solutions, and getting the job done earlier at lower cost with no significant increase in risk to workers. Mr. Pearson also identified two items from the EMI effort that include shipping vitrified West Valley Demonstration Project HLW to SRS for interim storage and accelerating completion of SRS HLW vitrification from 2028 to 2022.

Mr. Pearson concluded his presentation by discussing the three alternatives involving West Valley HLW canisters and the dollar plus-ups required for each alternative. They are: Alternative 1 which uses existing interim storage at West Valley (\$657M); Alternative 2 that suggests constructing a new interim HLW storage facility onsite at West Valley (\$152M); and, Alternative 3 that recommends shipping HLW canisters from West Valley to the SRS Glass Waste Storage Building (\$27M).

Bill McDonell asked how DOE could accelerate HLW vitrification by six years. Mr. Goldston responded that it would require increased levels of funding to feed the Defense Waste Processing Facility (DWPF). Mr. Pearson added that new technologies are also available that move waste quicker at a lower cost. A copy of the HLW System Plan will be provided to Mr. McDonell.

Karen Patterson asked if the glass vitrification system at West Valley is the same as that of SRS. Mr. Pearson responded that it is the same, and although SRS was ahead of West Valley in the vitrification process, he added that SRS gained great benefit from lessons learned during the development and research of glass vitrification at West Valley.

Bill Lawless asked why Alternative 1 was so expensive (\$650M). Mr. Pearson explained that the West Valley onsite operations and storage building, built in the mid 1960s, is expensive (\$650) to maintain, ventilate, and monitor until shipment of the canisters in 2015. In addition, a costly

rail spur must also be maintained. He added that in Alternative 2, the dry storage of the canisters on concrete pads is also expensive to monitor and maintain and requires National Environmental Policy Act (NEPA) activities.

Kathryn May asked if cost is the only factor in shipping vitrified West Valley HLW to SRS. Mr. Pearson explained that in addition to the cost factor, DOE could finish the HLW mission at West Valley. It was also noted that SRS would be able to start building the second SRS waste storage facility sooner and the potential existed for also building the shipping and receiving facility. Bill Lawless said there appeared to be many strong advantages to shipping the vitrified West Valley HLW canister to SRS including being ready to ship the waste to the federal repository just as soon as it opens.

Todd Crawford asked what are the options for transporting the West Valley vitrified HLW to SRS. Mr. Pearson said there were three options: (1) highway truck that holds one can in a shipping cask; however, he noted the question of licensing has not been introduced yet; (2) railroad train with two casks that holds four canisters at a time (most economical); however, there is no licensing approved for this option either; and (3) water (with a nearby lake, West Valley can ship by barge). Mr. Pearson added that in all options, an important factor would be the manufacturing of licensed shipping casks.

It was also noted that shipping methods have been analyzed and are a part of the Waste Management Programmatic Environmental Impact Statement where it stipulates that based on the safety analysis study, trucks are safe but that trains were safer (due to fewer shipments being required) and more cost effective.

A draft motion on shipping West Valley vitrified High Level Waste to SRS was reviewed and discussed.

Bill Lawless introduced Dr. William McDonell, a private citizen who summarized his transuranic (TRU) waste disposal presentation by saying that the processing of high activity (Pu-238) TRU wastes through intrusive characterization facilities for the Waste Isolation Pilot Plant (WIPP) disposal incurs high life-cycle costs (~\$1 billion for legacy volumes). Mr. McDonell added that less costly (glove-box shielded) facilities could result in high worker radiation exposures. Mr. McDonell offered his presentation in support of his belief that there is a need to develop a contingency plan for enhanced long-term storage of TRU wastes on site in the event funding for high-cost characterization facilities will not be available.

Dr. McDonell recommended that containment vaults for enhanced long-term storage of TRU wastes be designed and supported by performance assessments to ensure environmental acceptability. The presentation included examples of how Dr. McDonell derived his costs of TRU waste disposition and suggested that SRS use the model to project costs for current proposals in the EMI contractor discussion draft report.

Bill Lawless said a valid issue that SRS needs to be prepared in the event TRU waste has to remain at SRS had been raised by Dr. McDonell and commended him for his diligence in preparing the presentation.

Todd Crawford asked if there is a requirement to come up with a contingency plan. Joe D'Amelio responded that from all indications, WIPP is expected to open on schedule. However, he added that there is a SRS commitment to provide a complete plan for disposition of Mixed Waste, including Mixed TRU Waste, to SCDHEC by January 1999.

Bill Lawless recommended that Dr. McDonnell's proposal be readdressed by the ER&WM Subcommittee in 1998, after there has been an opportunity to see what happens with the WIPP. Dr. McDonnell agreed to the recommendation.

A handout on enhancements to parliamentary policy at ER&WM Subcommittee meetings was discussed and it was agreed that objections may be made to any topic under review by any of the attendees if they are made in a manner that is respectful of other attendees, that people with opposing or dissenting views "work through" the issues involved under conditions of harmony, and requests for information not provided or available at the meeting should be submitted in writing on the survey/comment form so that the request can be directed to the proper resource.

No public comments were made and Bill Lawless closed the meeting at 9:00 p.m.

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