

FALL 2006



SAVANNAH RIVER SITE CITIZENS ADVISORY BOARD

Board Beat

BOARD WORRIES OVER IMPASSE BETWEEN DOE AND STATE

The Savannah River Site (SRS) Citizens Advisory Board (CAB) is frustrated with the lack of progress in reducing the highest priority risk at SRS--the high level waste tanks. The Department of Energy (DOE) needs certain permits issued by the South Carolina Department of Health and Environmental Control (SCDHEC) to move forward with its disposition plan and SCDHEC wants a firm commitment from DOE to secure the necessary funding for the entire disposal process before it issues the permits.

Hoping to end a six-month impasse, the Board asked DOE and SCDHEC to work to resolve the stalemate so that the draft permits could be issued by August 15, 2006, with a final issuance date of October 15, 2006.

A crucial step in the high level waste disposal process is the early disposal with minimal treatment of low-activity salt waste through a process involving deliquification, dissolution, and adjustment (DDA). In order to maintain the high level waste disposal schedule, DDA should have started by July 1, 2006, and this did not happen. DDA can not proceed until SCDHEC issues the necessary permits.

Shelly Sherritt, SCDHEC, commented on the near-term disposal of salt waste with less treatment, noting "the technical elements of the plan

are good, but for the strategy to work, it has to work in tandem. SCDHEC is seeking commitment assurances from DOE for the whole strategy to feel more comfortable moving forward with DDA."

A recent letter from DOE Secretary Bodman to South Carolina Governor Sanford implies funding assurances but does not actually commit to nor identify funding requirements. However, the letter does commit to limit the DDA process to treat waste only from Tank 41, which restricts the curies that would be disposed in the Saltstone Facility to approximately 1 million versus the 3-5 million DOE had originally proposed, addressing one of the major concerns of SCDHEC regarding the ultimate curie content of waste remaining in South Carolina. Governor Sanford responded to Secretary Bodman expressing disappointment that a funding commitment was not made by DOE.

The SRS CAB has repeatedly voiced its expectations regarding the disposition plan process in priority order from salt waste disposition to bulk removal of waste from the tanks, followed by tank closure.

The Board's primary concern is that the continued delays in achieving long-term tank closure solutions increase the risk to public safety and the environment. The Board feels a

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The mission of the SRS CAB is to provide informed and timely recommendations to DOE, EPA and SCDHEC concerning decisions that affect SRS in areas of environmental restoration, waste management and related activities.

RECENT RECOMMENDATIONS HIGHLIGHTED

Recommendation 228- President's Fiscal Year (FY) 2007 SRS Budget Shortfall

Concerned that the President's budget for FY07 will be insufficient to meet the goals for accelerated clean up, CAB recommended that DOE-SR present how the President's FY07 Budget will affect or impact accelerated cleanup goals; identify potential impacts to current workforce levels (operational, technical and management); and provide a list of Environmental Management programs impacted. They further recommended that DOE-HQ request appropriate Congressional actions to provide SRS FY07 funding levels to rectify any shortcomings identified.

Recommendation 229-SRS TRU Waste Update

The SRS CAB recommended that DOE-HQ commit the necessary funding for the large box characterization equipment to be operational by the end of FY 2007 and report the status of the funding and required operator training. They also asked DOE-SR to identify ways to increase the packing efficiencies of TRUPACT-II containers system wide. The Board recommended that DOE-HQ continue to work on ways to increase the overall operational efficiencies of Waste Isolation Pilot Plant (WIPP) and asked to be made aware of potential operational bottlenecks at WIPP which may impact SRS transuranic (TRU) waste shipments.

Recommendation 230-Salt Waste Processing Facility Decision - HLW Disposition Program Systems

The CAB asked DOE-SR to recommit to starting up the DDA process by July 1, 2006, and recommit to closing tanks 18 and 19 by the end of FY07. They recommended that DOE-SR adopt quantitative risk and cost-benefit analysis procedures and documentation as part of the decision making in High Level Waste (HLW) management and that DOE adopt a systems approach in decision making in HLW management, performing risk and cost-benefit analyses on all affected systems influenced by that decision.

Recommendation 231-Integrated Management Approach (Salt Waste Processing)

The CAB asked DOE-SR to provide the method DOE uses to ensure that all pertinent testing and design information/data are shared between the two contractors working on salt waste processing and that existing contracting constraints do not interfere with the interactions and dissemination of information between the two contractors. The Board also asked DOE to explain how the hazard analysis process is being used to evaluate the hazards between existing and new facilities within the same general area and how the hazard analysis process can be implemented across a more integrated system wide basis.

Recommendation 232-Nuclear Materials Disposition, Consolidation & Coordination Committee

The SRS CAB asked that DOE provide timely updates on the NMDCCC activities whenever deliberations may affect SRS. The CAB requested notification before shipments of nuclear materials destined for disposition involving SRS are made and/or any time a decision by NMDCCC implicates or impacts SRS ongoing remediation activities at SRS. The Board ask that DOE send no additional plutonium (pu) or pu-laden materials to SRS until a materials disposition path has been determined and a formal adoption of and commitment to a strategic plan and implementation plan occurs.

Recommendation 233- P Area Operable Units

The SRS CAB is very interested in the ultimate end state of P-Reactor as it will likely set the example for other hardened facilities at SRS. Therefore, they recommended the three parties continue to brief the SRS CAB on ongoing unit characterization; host a series of public workshops on the P Reactor End State process; consider issuing an Record of Decision in 2010; and ensure that adequate funding is available to complete the end state planning process as well as P Area closure as scheduled in the SRS Federal Facility Agreement.

Recommendation 234- SRS Budget Participation

Concerned that participation by the SRS CAB in the budget process has been very limited in recent years, the SRS CAB recommended that DOE-SR institute a consistent and effective budget participation process that involves stakeholders in the establishment of SRS funding priorities and levels for environmental actions and regulatory compliance. The Board also recommended that DOE-HQ ensure that a consistent and effective budget participation process is being used across the DOE complex, with early participation by all of DOE's Site Specific Advisory Boards.

Recommendation 235- Nuclear Materials Stabilization - H-Canyon and HB-Line

The SRS CAB reaffirmed its stance on the importance and continued operation of H-Canyon recommending that DOE aggressively pursue alternatives to keep the H-Area assets (people and equipment) actively conducting risk reduction, such as stabilizing and dispositioning legacy nuclear materials. The CAB also requested DOE to provide timely updates on potential missions for H-Canyon and HB-Line.

236-Soil Vapor Extraction with Soil Fracturing

The SRS CAB supports the use of phased soil vapor extraction enhanced with soil fracturing, and institu

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BOARD WORRIES OVER IMPASSE

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great sense of urgency to minimize the greatest remaining risk at SRS.

“These 51 high level waste tanks were never intended to be a permanent storage method” said Bob Meisenheimer, Waste Management Committee Chair. “These tanks were only considered as interim storage to last up to fifty years each” said Meisenheimer. “Now, some fifty years later, they are well beyond their original design life and only two tanks have been closed, yet they are expecting to use them for another 20-30 years.”

While a tank inspection program provides some safeguards, it can't increase tank space or expedite tank closures. The continuing reliance on old non-compliant high level waste tanks whose design would be unacceptable today, on support systems that have exceeded their design life, and on tanks known to have numerous cracks and leaksites, is unacceptable to the SRS CAB, which believes the already high risks are magnified if the removal process is not started very soon.

RECENT RECOMMENDATIONS HIGHLIGHTED

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tional controls as the proposed remedial alternative for the M-Area Inactive Process Sewer Lines. They asked that DOE provide annual updates on the potential spread of contaminants and asked DOE to conduct an investigation into the likelihood that pockets of low permeability soils with contamination may exist after the remedial technology is deployed and report the findings to the SRS CAB during the annual updates.

237-HLW Risk Reduction Efforts

Frustrated by the lack of progress with the High Level Waste Disposition Process Plan, the SRS CAB recommended that DOE and SCDHEC work to resolve the existing stalemate so that the draft permits for the first stage of the process (DDA) can be issued by August 15, 2006, with a final issuance date of October 15, 2006. In order to maintain the high level waste schedule, DDA should have started by July 1, 2006. To date, regulatory permits from SCDHEC have not been received and neither has DOE commitment for funding to proceed. The Board requested a status of the actions taken to resolve the stalemate by August 15, 2006.

Interested in or Speakers Bureau?

For more information, please call 1-800-249-8155



Karen Patterson receives National Volunteer Service Award on behalf of the SRS CAB from James Rispoli, DOE Assistant Secretary for Environmental Management

OAK RIDGE BOARD HOSTS SSAB CHAIRS

The Oak Ridge Site Specific Advisory Board (SSAB) hosted the spring meeting of the SSAB Chairs on April 27-28, 2006, in Knoxville, TN. The leadership from nine SSABs attended the meeting and received updates from several DOE officials, including James Rispoli, Assistant Secretary for Environmental Management (EM); Charlie Anderson, Principal Deputy Assistant Secretary for EM; Mark Frei, Deputy Assistant Secretary for Business Operations; and Douglas Tonkay of the Office of Commercial Disposition Options.

Assistant Secretary Rispoli spoke on the vision for the EM Program elaborating on five main focus areas: safety in conduct of operations; risk reduction; project management; human capital and lessons learned.

During the meeting, the Chairs drafted two recommendation letters regarding lessons learned in future site closures and EM SSAB input to future site budget requests. Both were subsequently adopted by the full boards of all nine SSABs and transmitted to Mr. Rispoli.

The EM SSAB is the largest advisory board chartered under the Federal Advisory Committee Act. Its mission is to provide DOE with advice and recommendations on DOE's Environmental Management Program.



Chairs of nine SSABs met this spring in Knoxville, Tn.

DOE DIRECTS NEW CAB ADMINISTRATION

As of October 1, 2006, DOE will manage the SRS CAB and contract some aspects to a new administrative team not associated with the management and operation (M&O) contractor. In 2003 DOE issued guidance to ensure compliance with federal budget reporting requirements. The SRS CAB was in compliance with the requirement and after much work by Board members and the community, the CAB was exempted from the change until the conclusion of the M&O contract with DOE, initially presumed to be September 30, 2006. Despite efforts by the CAB to maintain current administrative support, the Board was mandated by DOE to adopt one of three administration options: DOE, 8 (a) small, disadvantaged business, or 501-C(3) non profit incorporation as the administrative venue for the CAB.

DOE presented options for administration to the SRS CAB Administrative Committee on June 7 and asked for and received input from the CAB on its preferences of management choices. The CAB provided a position paper favoring a DOE-administered CAB because that seemed the least likely to significantly disrupt the CAB's functioning. In the position paper, and at a later meeting with DOE, the CAB identified specific functions that the CAB perceives as the bedrock of an effective Board, consistent with its charter to provide advice and recommendations to DOE on environmental management issues. The Board reluctantly accepted the loss of its administrator of 13 years, but repeatedly asked DOE to retain the remaining staff for facilitation, technical advice and contractor interface contacts to ensure minimal loss of effectiveness.

DOE informed the CAB on June 30 of its decision to go with the DOE-administered option. Under this option, DOE will receive some assistance from an 8(a) contractor, however, this contractor will be fully managed by Federal staff.

On August 2, DOE provided the CAB with the draft proposed statements of work for the new administration team. "The proposed DOE approach will completely eliminate the underlying knowledge base that contributes substantially to our success," said Karen Patterson, Chair of the Board. "For many of the CAB Members, this calls into question DOE's motive." In an unexpected turn of events, the proposed scopes of work represents five positions, two federal staff and three to be filled through the 8(a) contract — meeting coordinator, facilitator and technical advisor. It is very unlikely,



(Pictured from left to right: Lola Richardson, former CAB member, Mike Schoener, MAS Consultants, Inc. and Dawn Haygood, Washington Savannah River Company) Mike Schoener has been the Board Facilitator since 1998 and Dawn Haygood has served as Board Administrator since the Board's inception in 1994.

because of current and new contracting arrangements, that any of the existing CAB administrative staff will be retained. One of the federal positions eliminates the roles of the contractor interface contacts with the M&O contractor, and the other three positions are expected to be provided by a single new contractor.

Exacerbating the CAB's concerns regarding the loss of all technical staff familiar with the CAB perspective and history on specific EM issues is the fact that the SSAB charter now restricts participation by knowledgeable public. "The CAB will not be effective if all institutional knowledge is eliminated, and for DOE to think otherwise is incredulous," said Patterson.

"Regardless of DOE's decision on how to proceed with the new CAB administration, it is regrettable, but true, that the fact that DOE chose to ignore every CAB request, after asking the CAB to support an action that CAB did not agree with, has hurt DOE's credibility with many of the CAB members," says Patterson. "It took DOE a long time to earn the trust of the public, and, unfortunately, it will take a long time to regain — much longer than it took to destroy it."

VISIT OUR WEBSITE AT WWW.SRS.GOV AND CLICK ON OUTREACH

FB LINE- “COLD, DARK AND DRY”

FB Line, whose purpose was to refine and finish the plutonium stream from F Canyon to produce weapons grade plutonium for national defense, is now “cold, dark and dry.” All plutonium has been removed and the facility has completed deactivation.

Located on top of F Canyon, FB Line was constructed in the 1960s to receive plutonium-239 nitrate solution and convert it to a solid form. The plutonium was precipitated, filtered, dried and reduced to a metal form, called a button. Activities were conducted in enclosed gloveboxes for protection of workers. FB Line was also used to stabilize and package legacy nuclear materials for safe, long term storage.



SRS employees hang string lighting in an FB-Line corridor. These lights provide the only illumination in an otherwise pitch-dark facility.

NUCLEAR MATERIALS COMMITTEE VISITS SAVANNAH RIVER SITE

Even the South Carolina summer heat could not hinder the curiosity of twelve SRS CAB members who toured various areas on June 20 to learn more about onsite storage of plutonium and spent nuclear fuel. Hosted by Kevin Smith, DOE-SR Assistant Manager for Nuclear Materials Stabilization and Board Ex-Officio Member, the tour group heard about efforts to consolidate plutonium storage at the K Area Materials Storage Facility, where 3013 containers are kept inside 9975 packaging and continually monitored.

The drivers to consolidate plutonium into a single onsite facility were the implementation of updated Safeguards and Security requirements and the significant security upgrade costs to maintain two Category 1 nuclear materials facilities at SRS (the second was located in F Area) and a full range of plutonium-handling capabilities including surveillance and stabilization operations could be located in the K Area Complex (KAC). The KAC was chosen because it was home to K Reactor and had undergone stringent, well-documented earthquake

and structural upgrades in preparation for reactor restart in the early 1990s. Cost benefits were realized by converting the robust facility into a storage facility for plutonium, which has been safely maintained there since 2002. Personnel have successful plutonium storage experience and adequate space is available for additional storage, surveillance and stabilization activities.

The Committee also toured L Area where aluminum-based spent nuclear fuel has been consolidated at SRS. In 1996, L Basin was reconfigured to safely handle and store spent nuclear fuel from offsite (foreign and domestic) research reactors. Additionally, all spent fuel stored on SRS was consolidated to L Basin. DOE plans call for continued receipt of approximately 4,000 more offsite SNF assemblies through 2019 in addition to the 5,638 assemblies already received from 23 other countries and the 2,363 assemblies received from domestic research reactors. The current spent nuclear fuel inventory in L Basin is 12,399 assemblies. Board members also received briefings on H Area, F Canyon/FBLine, the

Analytical Laboratories; and the F Area Materials Storage Facility. Following the tour through the areas, CAB members met with all presenters for an extended question and answer session. “This was a highly informative tour,” said Manuel Bettencourt, NM Committee Chair. “Hearing directly from managers involved with the various projects proved to be very beneficial and educational for all participants.”

SRS CAB members participated in posters sessions at several areas on site that deal with storage of plutonium and spent nuclear fuel.



MAJOR SALT PROCESSING MILESTONE MET

SRS recently met a major milestone with the installation of unique equipment designed to remove radioactive cesium from millions of gallons of liquid salt solution stored at the site. The machines, known as centrifugal contactors, have completed a thorough and rigorous testing program, clearing the way for the installation of eighteen contactors within a new H Tank Farm facility.

The new process is the cornerstone for safely and cost effectively removing salt solution from high level waste tanks and, therefore, reducing radiological risk to employees, surrounding communities and the environment. Removing the salt solution will create additional tank space that will assure the continued operation of other risk-reducing nuclear operations at SRS, such as those found within H Canyon and the Defense Waste Processing Facility.

This new cesium removal project, called the Modular Caustic Side Solvent Extraction Unit, or MCU, is expected to operate for approximately three years as an interim process until the Salt Waste Process-



Work on the Modular Caustic Side Extraction Unit (MCU) continues as teams work to modify waste transfer lines. MCU will process waste before it is transferred to Saltstone or the Defense Waste Processing Facility for final disposition.

ing Facility fulfills this function long-term, with full scale operation beginning in 2011.

Using principles involving centrifugal force and a special engineered solvent, the contactors take highly radioactive salt solution and divide it into two waste streams. The radioactive cesium is removed and sent to DWPF to be mixed with molten glass. The remaining stream is a low-activity salt solution, which will be transferred to the Saltstone facility.

Though contactors have been used within the site's chemical separations facilities for decades, this technology has been modified to support the removal of radioactive nuclides from liquid waste for the first time.

Construction of the MCU process is currently 70 percent complete and expected to be finished before the end of this year. At that time, testing of the entire MCU production process begins.

NEVADA TEST SITE OPENS PATHWAY FOR SC WASTES

A recent shipment from SRS to the Nevada Test Site (NTS) has opened a new pathway for getting low-level mixed waste (LLMW) out of South Carolina. This is waste that has low levels of radioactivity as well as some chemical constituents.

As workers have been uncovering drums of transuranic (TRU) waste and characterizing them, they discovered that some of the waste is not TRU, as it does not contain the necessary radionuclides. Savannah River, as well as other sites had

waste that did not meet acceptance criteria for any receiver. NTS has long been a potential option, but their permit needed to be revised before they would be able to accept LLMW. That revision has been in the works for several years and finally, it became apparent that the revision would be approved. Workers began repackaging waste in March 2006, and when the NTS permit revision was approved, SRS was ready. The first shipment left SRS June 15.



Mixed low-level waste leaves SRS for the Nevada Test Site.

SRS HIGH LEVEL WASTE TANKS

Radioactive waste from chemical separations processes is stored in 49 of 51 high level waste tanks in F and H Areas at SRS. Over 140 million gallons of nuclear waste have been generated and concentrated by evaporation to the present volume of about 34 million gallons. Since 1954, SRS waste tanks have provided safe storage for radioactive waste, however these aging tanks were never designed to be used for more than 50 years each.

Four tank designs have been deployed at SRS. Types I and II, the oldest tanks, have 5-foot high secondary containment pans within a concrete vault and forced cooling water systems. Twelve Type I tanks are 75 feet in diameter and built to hold 750,000 gallons. Type II tanks are 85 feet in diameter and hold 1.03 million gallons. There are four Type II tanks. Some of the older tanks have developed hairline cracks and made use of their secondary containment systems. Waste levels within those tanks have been lowered below all known leak sites. Tank 16 (Type II) is the only tank to have had a release to the environment, which occurred in 1960, when a few tens of gallons of waste escaped to the soil. The tank was removed

from service and cleaned. Tank Types I and II were built between 1951 and 1956. Eight more tanks were built from 1956 to 1960 and they are referred to as the Type IV tanks. They have a single wall and do not have a forced cooling system. Within the 24 older tanks, over 400 leak sites have been identified. These tanks will be given priority for waste removal and closure.

Type III tanks, of which there are 27, were constructed as a tank within a tank and have full-height secondary containment. No cracks or leak sites have occurred in any of the Type III tanks, which were designed to hold 1.3 million gallons of waste. The inner primary tank that actually holds the waste is shaped like a doughnut around a central concrete column that supports the roof.

A secondary containment tank completely surrounds the primary tank and is surrounded by a 2-4-foot thick concrete vault. These tanks were built between 1966 and 1981 and incorporated lessons learned from construction of the earlier tanks to prevent cracks and leaks.

The composite inventory of the SRS tanks includes 33.6 million gallons of waste with 424 million curies of radioactivity. The waste is in both solid and liquid forms. Salt forms include supernate, concentrated supernate and salt cake. The salt portion of the waste is primarily

Cesium-137. The insoluble solids or sludge settles and accumulates on the bottom of the tanks and is the consistency of peanut butter, making up eight percent of the volume of waste and 55 percent of the radioactivity. Liquid above the sludge is concentrated by evaporation to reduce its volume. As the concentrated liquid “supernate” cools, a portion crystallizes, forming the solid saltcake.

Closure of the SRS high level waste tanks has been a priority of the SRS CAB since

its inception. The tanks are a primary concern in that the continued delays in achieving long-term tank closure solutions increase risk to public safety and the environment. The SRS CAB feels a great sense of urgency to minimize what it views as the greatest remaining risk at SRS.



Construction of 51 high level waste tanks began in the early 1950's and continued until 1981.

<u>Old Style Tanks</u>	<u>Qty</u>	<u>Known Leaks</u>
Type I Style Tanks	12	7 tanks
Type II Style Tanks	4	4 tanks
Type IV Style Tanks	8	2 tanks
<u>Compliant Tanks</u>		
Type III Style Tanks	27	None



Savannah River Site Citizens Advisory Board

Key criteria for Board membership includes a time commitment and the desire and ability to work towards better and informed recommendations.

To apply for membership to the Citizens Advisory Board, please call 1-800-249-8155.

**Board Beat* is published semiannually by the Savannah River Site Citizens Advisory Board. Content is provided by Board members and support staff. Please send your comments and suggestions to:
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Upcoming 2006 Citizens Advisory Board Meetings

September 25-26
November 13-14

Double Tree Hotel, Charleston, S.C.
Augusta Towers Hotel, Augusta, Ga.

Note: Individual committee meetings will be held as required.

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