

Meeting Minutes
Savannah River Site Citizens Advisory Board (CAB) – Combined Committees Meeting
Savannah, Georgia
September 23, 2013

Monday, September 23, 2013 Attendance:

CAB
Thomas Barnes
Artisha Bolding
Dr. Donald Bridges
Ed Burke
William Calhoun-*Absent*
Louie Chavis
Robert Doerr
Kathe Golden
Jessica Grainger
Dr. Rose Hayes
Dr. Virginia Jones
Cleveland Latimore
Clint Nangle
Dr. Marolyn Parson
Larry Powell
Dr. William Rhoten
Earl Sheppard
Harold Simon
John Snedeker-*Absent*
George Snyder
Nina Spinelli
James Streeter-*Absent*
Ed Sturcken
Christopher Timmers
Louis Walters-*Absent*

DOE
Terry Spears, DOE-SR
Sandra Waisley, DOE-SR
Jean Ridley, DOE-SR
Avery Hammett, DOE-SR
Brian Hennessey, DOE-SR
Pat McGuire, DOE-SR
Doug Hintze, DOE-SR
Allen Gunter, DOE-SR
Bill Taylor, DOE-SR
Gerri Flemming, DOE-SR

Stakeholders
Suzanne Rhodes
Mel Galin
Tom Clements
Karen Paterson
Gary Zimmerman
Chris Kiruff
Frank Redmond

Agency Liaisons/Regulators
Trey Reed, SCDHEC
Kyle Vickery, SCDHEC
Van Keisler, SCDHEC
Heather Cathcart, SCDHEC
Beth Cameron, SCDHEC
John Simpkins, SCDHEC
Kim Brinkley, SCDHEC
Shelly Wilson, SCDHEC
Rachel McCullough, EPA
Kyle Bryant, EPA
Diedre Lloyd, EPA

Contractors
Shelia McFalls, SRNS
Stuart Macvean, SRR
Kim Hauer, SRR
Ashley Whitaker, NOVA
James Tanner, NOVA
Jesslyn Anderson, NOVA

CAB Facilitator, Ashley Whitaker, NOVA, welcomed everyone to the meeting. She reviewed the day's agenda and Meeting Rules of Conduct. She stated a public comment period was scheduled for the end of the meeting and reminded everyone how to access electronic copies of meeting materials through the CABNET feature. She said there were tour booklets at the seats of CAB members who were unable to attend the tour of Savannah River Site (SRS) on September 16, 2013. She reminded everyone to sign the attendance sheet before welcoming CAB Chair Donald Bridges to open the meeting.

CAB Chair Bridges welcomed everyone to Savannah, Georgia (GA). He briefly recognized Ms. Sandra Waisley, Department of Energy Savannah River (DOE-SR), who would be serving with Mr. Terry Spears, DOE-SR, as one of the Co-Designated Deputy Federal Officials (DDFO) for the CAB.

PRESENTATION: Recommendation & Work Plan Update- Jesslyn Anderson, NOVA Corporation

Ms. Jesslyn Anderson, NOVA, provided an update on the recommendation status report and Work Plan progress. She stated recommendations 304, 305, 306, 307, 308, and 309 were currently open. She provided an update of the CAB Work Plan and highlighted each committee's progress so far for the year.

Administrative & Outreach (A&O) Committee Overview- Nina Spinelli, Chair

CAB member Nina Spinelli listed the A&O Committee members before she introduced Ms. Karen Patterson, Governors Nuclear Advisory Council (GNAC), to begin her presentation.

PRESENTATION: Community Presentation- Karen Patterson, GNAC

Ms. Patterson said the purpose of her presentation was to provide an overview of the GNAC, commonly referred to as the "Council." She mentioned both the CAB and GNAC had different, but complimentary roles when it came to SRS. She explained that the CAB was limited to discussing Environmental Management (EM) projects, regardless of whether the projects were nuclear or non-nuclear; however, the GNAC focused on only nuclear projects. Ms. Patterson said the purpose of the GNAC was to be the "eyes and ears" of the South Carolina (SC) Governor on various SC nuclear industry issues at SRS, seven nuclear facilities, the Barnwell Low-Level Waste (LLW) Disposal Facility, Atlantic Compact, and the Westinghouse Fuel Fabrication Facility in Columbia, SC. She provided a copy of the authorizing statute that established the GNAC in the year 2001. She said GNAC resided in the Energy Office of the South Carolina Budget and Control Board, which fell under the offices of the Secretary of State. She explained Governors could not simply dismiss the Council since it was required by law before she listed the nine Council members. She said the responsibilities of the GNAC included the use, handling, and management of the transportation, storage, or disposal of nuclear materials in or outside SC. She discussed the Atlantic Compact, which was an agreement that allowed SC and industries in New Jersey and Connecticut to dispose of their LLW at the Barnwell LLW Disposal Facility. She explained Westinghouse Fuels in Columbia, SC was also of interest to the Council since the facility produced fuel for "pressurized water reactors" and "boiling water reactors." She said there were several opportunities for "nuclear interaction" in SC and GNAC played various roles in learning about nuclear activities at SRS. She said the Council was responsible for determining important issues that should be sent to the Governor for consideration. Ms. Patterson explained that once the Council informed the Governor of issues, the Council usually was asked to respond on behalf of the Governor about the issue. She said major issues that potentially could affect the well-being of citizens, or the economy, were not issue the Council passed on to the Governor. She listed recent SRS issues GNAC focused on providing contact information. She stated GNAC usually held quarterly meetings on the second Thursday of each month.

CAB member Rose Hayes asked how GNAC appointed its Senate and House members. Ms. Patterson said the House and Senate looked for individuals interested in the nuclear industry. Ms. Patterson explained that the President's Senate appointed the "Senate appointment member" of GNAC and the Speaker of the House, appointed the "House appointment member" of GNAC. Ms. Patterson said the current Senate and House appointments, Senator Tom Young and Representative Don Wells, were both chosen due to their genuine interest in SRS.

CAB Chair Bridges asked how GNAC formed recommendations. Ms. Patterson explained that recommendations from GNAC were not public, but were given straight to the Governor. He also asked what a typical action was, unrelated to SRS, that the GNAC had focused its attention towards. Ms. Patterson said usually various individuals across SC usually point out important issues they think the Council should focus on; however, GNAC received annual updates on several projects across SC.

Facilities Disposition & Site Remediation (FD&SR) Committee Overview- Marolyn Parson, Chair

CAB member Marolyn Parson listed the FD&SR Committee members and reviewed the committee's objectives. She provided a recommendation status update, stating recommendations 293 and 294 were open. She reviewed each recommendation and DOE response before discussing key points from the August 13, 2013, FD&SR Committee meeting. She said at the meeting the FD&SR Committee received presentations on the "Emergency Preparedness Plan" and the "Annual Integrator Operable Unit (IOU) Program Update." CAB member Parson said she planned to discuss one draft recommendation after the days scheduled presentation and announced the next FD&SR Committee meeting was scheduled for October 8, 2013, and reviewed presentations scheduled for that meeting. She then introduced Mr. Brian Hennessey, DOE-SR, to begin both of his presentations.

PRESENTATION: Federal Facilities Agreement (FFA) Appendix E Projected Changes- Brian Hennessey, DOE-SR

Mr. Hennessey stated the purpose of his presentation was to satisfy a 2013 FD&SR Committee Work Plan requirement by providing information on the Federal Facilities Agreement (FFA) Appendix E. He briefly discussed the background of the FFA, before providing an overview of Appendix E, which he said was a legally binding agreement between Department of Energy (DOE), Environmental Protection Agency (EPA), and South Carolina Department of Health and Environmental Control (SCDHEC) governing the comprehensive cleanup of SRS. He stated DOE updated Appendix E annually and submitted it to SCDHEC and EPA for review in November. He provided a diagram, which showed the milestones for the three appendices, E.1, E.2, and E.3, which make up Appendix E. He provided a schedule to prepare, submit, revise, and issue Appendix E. He provided a flow diagram to explain the documents that are necessary to reach the milestones within Appendix E. He provided an overview of the 2013 Appendix E as well as key milestones that were approved for fiscal year (FY) 2014 and FY 2015. He addressed future FY 2016 milestones explaining that the end of program date was extended to 2042 due to program extensions in H-Area, K-Area, L-Area, N-Area, and A-Area. He explained since missions in these five major areas were extended, IOU schedules were revised to re-sequence IOU closure in order for the Savannah River and Floodplain Swamp IOU's to be assessed and remediated last.

He provided a chart titled, "SRS Area Completion Plan" to show the completion dates for industrial areas of SRS and groundwater units going along with each area. He explained the colors for each bar on the chart before he discussed FFA Appendix E anticipated major changes for FY 2014. He listed the current year performance impacts, which included areas that needed to be discussed with regulators before specific completion dates were assigned. He provided various images of the 690-N Ford Building, K-Area Ash Basin, L-Area Ash Basin, and early construction operational disposal sites (ECODS) N-3. He said these buildings were the facilities needing to be addressed with the regulators. He said there were no programmatic impacts at that time and DOE would provide an information briefing on the Revision 0 of FY 2014 Appendix E after it was submitted to the regulators for review. He said the current approved FY 2013 Appendix E could be viewed on SRS's external website.

CAB member Kathe Golden asked what four tanks were scheduled to be closed at the end of the year 2015. Mr. Hennessey said tanks five and six were in the process of being closed; however, since specific tank numbers were not associated with milestones, any four tanks would meet the requirement. CAB member Golden asked why projects on the SRS Area Completion Plan chart were moved further into the future. Mr. Hennessey explained those activities were moved because missions were extended in those particular areas, which meant the facilities would not be inactive or ready to be decontaminated and decommissioned (D&D).

CAB member Hayes asked if a study had been conducted for 690-N Ford building. Mr. Hennessey said he was not aware of a study, but he said the building had been inactive for several years and DOE conducted investigations during the American Recovery and Reinvestment Act (ARRA) period to determine the general condition of the building. He said the building contained "general radioactive contamination material."

CAB Chair Bridges asked why the FFA only applied to 24 tanks and not all of them. Mr. Hennessey said, "24 tanks did not meet Resource Conservation and Recovery Act (RCRA) secondary containment requirements, but the other 27 tanks did." Mr. Hennessey explained that there were separate requirements for both types of tanks.

Ms. Shelly Wilson, SCDHEC, explained some of the tanks did not have adequate secondary containment, which was why those tanks were categorized under a schedule for closure. Ms. Wilson said the other tanks did not have scheduled closure dates because those tanks met all the secondary containment requirements. Ms. Wilson said the regulations did not allow legacy waste to "sit around forever," which was why all the waste, no matter what tank the waste was stored in, had to be treated by the year 2028. Ms. Wilson stated all tanks had to close under a wastewater closure plan, but the FFA listed closure dates for some tanks but not for others, while the Site Treatment Plan (STP) had a 2028 waste treatment completion date.

CAB member Parson asked if any enforceable milestones were going to be missed during FY 2014 due to the current budget situation. Mr. Hennessey said, "Not as of right now." She also asked Mr. Hennessey, if he could provide larger copies of the SRS Completion Plan chart at future meetings. Mr. Hennessey agreed to her request.

CAB member Ed Burke asked if any previously agreed upon dates would be delayed due to budgetary concerns in the FY 2014 budget. Mr. Doug Hintze, DOE-SR, said there were no milestones in FY 2014 DOE-SR would miss because of budgetary reasons; however, some milestones were at risk for FY 2015. Mr. Hintze explained that since DOE-SR was not making enough progress in FY 2014 to make sure all FY 2015 milestones were met, commitments in the out years beyond the FY 2015 could also be impacted.

Mr. Terry Spears, DOE-SR, reminded everyone that DOE-SR had not received a budget for FY 2014; however, the President's budget request was significantly shorter, which would make it difficult to meet FY 2015 commitments. Mr. Spears added that the tank waste program was ahead of schedule with waste removal and tank closure commitments.

CAB member Artisha Bolding asked if the old style tanks were still on target for closure in 2022. Mr. Spears said budgets were a concern for FY 2014, 2015, and beyond; therefore, it was difficult to answer her question until the FY 2014 budget and President's request were known.

PRESENTATION: Annual Integrator Operable Units (IOU) Program Update- Brian Hennessey, DOE-SR

Mr. Hennessey said the purpose of his presentation was to fulfill an FD&SR Work Plan requirement by providing an update of the IOU Program, the Steel Creek IOU Wetland Area at Dunbarton Bay (WADB), and outlining the path forward for the IOU Program. He provided an overview of the IOU Program and mentioned that during the year of 1997, the streams at SRS were added to the FFA. He explained how each IOU included the surface water, sediment, floodplain soils, plants, and animals. He stated the purpose of the IOU Program was to evaluate contaminants in SRS stream systems, determine whether early cleanup actions were necessary, and ensure a final IOU cleanup decision was made once all IOU actions were completed. He stated that as periodical reports and monitoring occurred, DOE-SR evaluated whether there were any conditions that warranted early cleanup actions. He explained that at the end of each IOU project there would be a final cleanup decision once all active missions within the watershed for each IOU were completed. He discussed the phases of the IOU program stating that phase one involved developing the IOU work plans. He explained that at the beginning of the IOU project, a work plan was developed for each of the six IOU's. He said developing a work plan was a "tremendous undertaking" because it pulled together all of the information, from both DOE and non-DOE sources, about each of the six IOU's. He said the work plan presented what DOE-SR thought current conditions were during the year 2000, and what data needed to be collected in order to learn about the streams. Mr. Hennessey said phase two dealt with conducting several studies of IOU's in order to determine the impacts to human health and ecological impacts. Mr. Hennessey explained that during phase two, "human health and ecological IOU Phase II Receptors" were used to determine an IOU's amount of "hypothetical risk." He said phase three only involved Lower Three runs. He explained once a watershed no longer had active missions, DOE would conduct conventional remedial investigations to look at data, define any problems that require DOE to take an action, conduct feasibility studies to assess remedial alternatives, and if necessary issue a Record of Decision (ROD).

He listed several organizations that were involved with the IOU Program. He provided a map of the Steel Creek IOU before he focused on an area inside the Steel Creek IOU known as the Wetland Area at Dunbarton Bay (WADB). He said in 2010, it was discovered during the closure of the P-Area Ash Basin that coal ash extended well beyond the boundaries of the P-Area Ash Basin. He said there was a large area where coal ash was deposited on the ground towards a Carolina Bay known as the Dunbarton Bay. Mr. Hennessey said coal ash that was deposited outside the P-Area Ash Basin covered approximately 38 acres. He explained that an individual would not necessarily notice the coal ash deposits because the area was overgrown with vegetation. He said in an investigation, ash, and the soil beneath the ash, surface water, shallow groundwater, plants, and animals were all sampled. Mr. Hennessey said samples were also taken in a nearby Carolina Bay to see how Dunbarton Bay compared after years of having ash in it. He provided another map to show the "industrial footprint" of P-Area and pointed out the area where the coal ash was located. He said Dunbarton Bay was "special" because it frequently had standing water in it, along with mature cypress, tupelo, and amphibian habitats. He provided pictures of the cypress and tupelo habitats in Dunbarton Bay and Bay 100 before he showed pictures of "capture buckets" that were used to study amphibians. Mr. Hennessey said the final cleanup decision for the Steel Creek IOU was not close to being finished, because L-Area was still active and P-Area groundwater needed to be investigated. He said cleanup criteria for the WADB was

developed, which was DOE-SR intended to be the final cleanup for this part of the Steel Creek IOU. He said ecological and human health IOU receptors were considered with developing the final cleanup criteria.

CAB member Burke asked Mr. Hennessey how the phrase “cancer risk of one in a million” applied to human health. Mr. Hennessey said the phrase was an example of a trespasser exposure scenario. Mr. Hennessey said an industrial worker was a receptor that assumed someone was on SRS 40 hours per week, 50 weeks per year, for 25 years, which was based on hypothetical exposure parameters.

He discussed the results of the Ecological Risk Assessment study the Savannah River Ecology Laboratory (SREL) conducted on the WADB and Bay 100. He listed several contaminants that were slightly elevated in sampled animals; however, even though the animals had measurably higher contaminant levels, the number of species in the WADB was comparable to the diversity of species in the Bay 100. He said the study focused on trophic modeling to assess the potential threat of metals in the Great Blue Heron and raccoon. He said aluminum exceeded a threshold for the raccoon in both the WADB and Bay 100. He said levels of aluminum were higher in Bay 100 representing that it was just natural variability and not the presence of ash. He said the Ecological Risk Assessment concluded there were no ecological problems that warranted action, but the ash itself had contamination that posed an unacceptable risk for onsite worker scenarios. He mentioned an onsite worker was different from an industrial worker because an onsite worker was someone who had much less exposure than a full time industrial worker did. Mr. Hennessey explained the preferred method of cleanup for the WADB was to remove 13 acres of ash from the P-Area Ash Basin; however, since all the ash was not going to be removed, Land Use Controls would be used to minimize its exposure. He then provided a map to show the ash removal process before he discussed the path forward for the WADB and other IOU’s.

CAB member Spinelli asked if the raccoon population was being impacted by aluminum levels in the WADB. Mr. Hennessey replied that since the raccoon population had not decreased, it meant the raccoons were not being impacted by the aluminum levels in WADB.

CAB member Hayes asked what the baseline was for reproductive rates among the animals that were exposed to higher levels of uranium, copper, and nickel. CAB member Hayes said her concern was that exposed species could possibly have visible genetic mutations. Mr. Hennessey said the SREL Ecological Risk Assessment did not mention the observation of any visible genetic mutations. Mr. Hennessey said the species that were studied seemed to be healthy and continued to maintain a population similar to the uncontaminated Bay 100.

Mr. Van Keisler, SCDHEC, said the IOU Program was very complex; however, he said analyzing each IOU was the last time it was possible to have a comprehensive look at an entire watershed. He explained that both the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and RCRA statutes, were used to analyze IOU’s. He said DOE, SCDHEC, and EPA were working together to determine “how clean is clean” when samples are collected after the ash was removed.

Recommendation Discussion

“Public Meetings on Background and Status of Underground Storage Tank Closure Program”

CAB member Parson introduced this draft recommendation. She said she asked DOE, SCDHEC, and EPA to review the draft recommendation; however, changes the regulators provided did not affect the original intent of the recommendation. She briefly reviewed the purpose of the draft recommendation before allowing CAB member Tom Barnes, recommendation manager, to discuss the changes.

CAB member Barnes discussed changes to the draft recommendation and suggested adding item number eight to the recommendation that would “invite members of the press to attend and report.”

CAB member Spinelli suggested including the Environmental Justice (EJ) staff from EPA to item number four of the draft recommendation.

CAB member Burke said he supported the action of cleaning the High-Level Waste tanks at SRS; however, he did not understand why the CAB could not handle the proposed meetings without drafting a recommendation to DOE.

CAB Chair Bridges said he also felt the draft recommendation was creating a “parallel operation of briefings.” He said the very topics to be discussed at the public meetings were the same topics that should be included within committee work plans. CAB Chair Bridges said the CAB would be the best group to hold such meetings.

Ms. Patterson, GNAC, said when she was previously a CAB member, there was an evening meetings for members of the public to come and speak with the CAB.

CAB member Parson said the purpose of the recommendation was to provide information to the entire public, not only individuals who happen to attend a CAB meeting. She mentioned how she felt these meetings would be beneficial because they would be scheduled at night and only discuss one topic.

CAB member Bolding said she supported moving forward with the draft recommendation. She agreed that the issue of informing the public was important; however, she felt the meetings should not be held in relation to the CAB. She suggested having less formal meetings, such as the EJ meetings, because it could possibly attract more people to disseminate more information.

Ms. Wilson said she appreciated the draft recommendation, but suggested changing the title to include the phrase “High-Level Waste Tank” instead of “Underground Storage Tank.” CAB member Parson said she wished to vote on the draft recommendation the following day.

Nuclear Materials (NM) Committee Overview, Rose Hayes, Chair

CAB member Rose Hayes listed the NM Committee members and reviewed the committee’s purpose. She provided a recommendation status update, stating recommendations 306, 307, 308, and 309 were open. She discussed the DOE response for the four open recommendations before she announced the next NM Committee meeting would be held on October 22, 2013. CAB member Hayes said she planned to discuss two draft recommendations after the scheduled presentation before introducing Mr. Allen Gunter, DOE-SR, to speak.

PRESENTATION: Update on H-Area Operations- Allen Gunter, DOE-SR

Mr. Gunter stated the purpose of his presentation was to satisfy a 2013 NM Committee Work Plan topic by providing an update on H-Area operations. He displayed the “SRS Waste and Material Flow Path” to illustrate the location of H-Area at SRS. He explained on April 18, 2013, DOE issued a letter to Savannah River Nuclear Solutions (SRNS) expressing concern about conduct of operations in its facilities. Mr. Gunter said no eminent safety issues were identified; however, DOE was concerned since the number of operational conduct issues had increased. He stated that SRNS submitted a Corrective Action Plan to DOE-SR on May 20, 2013, and a revision on June 14, 2013. Mr. Gunter said in order to improve disciplined operational conduct, numerous corrective actions were implemented for the facilities. He explained that DOE-SR noticed conduct improvements, but planned to continue evaluating SRNS’s progress. He explained that legacy transuranic (TRU) waste had been remediated in H-Canyon for the past seven years to achieve Waste Isolation Pilot Plant (WIPP) certification. He said H-Canyon had remediated the legacy waste; however, the waste was still at SRS. He explained how the TRU waste was remediated and placed into a WIPP certified packages, before it was sent back to the Solid Waste program so the TRU program could schedule shipments. He said the budget was a large factor, but DOE-SR hoped to ship all TRU waste packages to WIPP by the end of 2014. Mr. Gunter stated in November 2011, the National Nuclear Security Administration (NNSA) assigned H-Area a mission to produce plutonium oxide feed for the Mixed Oxide Fuel Fabrication Facility (MFFF) from “non-pit” material stored in K-Area. He said H-Canyon, HB-Line, and support facilities were being reconfigured in order to allow for a production rate of one metric tons of plutonium oxide. He provided a “Plutonium Oxide Production Flowsheet” to describe the process of producing plutonium oxide for MFFF before he discussed the current progress and status of plutonium processing. He said several safety, procedural, and training changes were implemented and H-Canyon began dissolving non-pit plutonium in January 2013. Mr. Gunter stated the HB-Line Document Safety Analysis (DSA) and Technical Safety Requirements (TSR) changes for oxide production were approved by SRNS and Savannah River Remediation (SRR). He explained SRNS completed its HB-Line Readiness Assessment (RA) the week of August 5, while DOE-SR began its RA on August 12. He mentioned DOE-SR planned to complete its RA in two weeks; however, the Department suspended the RA due to contractor concerns over the conduct of operations, procedural compliance, and shift turnovers. The contractor was

in the process of creating a Corrective Action Plan. Mr. Gunter explained he thought the facility would begin implementing results of the DSA/TSR and begin producing oxide in the middle of November. He discussed “vulnerable” spent nuclear fuel (SNF) disposition, which he said involved the continued disposition of Sodium Reactor Experiment (SRE) SNF. He said there were no current issues with SRE stored in L-Basin, but it was considered more “vulnerable” to long-term wet storage. He said SRE was being processed with high aluminum fuel to ensure the material was easily transferred; however, the SRE would be sent directly to the sludge batch tank to feed the Defense Waste Processing Facility (DWPF). He mentioned DOE approved a Supplement Analysis (SA) and Amended Record of Decision (AROD) to allow the processing of a limited amount of enriched uranium aluminum clad SNF, which he said included 1000 Material Test Reactor (MTR) bundles and 200 High Flux Isotope Reactor (HFIR) cores. Mr. Gunter explained that upon completion of the SRE campaign in spring 2014, SRS would proceed directly with processing aluminum clad (Al-clad) enriched uranium SNF. He said the H-Area complex continued to be a national asset for large scale nuclear material processing, maintained operator proficiency, and equipment operability.

CAB Chair Bridges asked if the AROD specified which MTR bundles and HFIR cores were chosen. Mr. Gunter said any 1000 bundles could be selected, but SRS had 120 HFIR cores, which meant all the racks were filled in L-Basin. Mr. Gunter said the 200 was HFIR cores were what was projected to be ready by the time DOE-SR completed the limited processing campaign.

CAB member Golden asked Mr. Gunter to describe an operational conduct issue. Mr. Gunter provided an example by explaining how the shift turnover process was not as fluid as it should have been. He stated there were no eminent safety concerns, but the contractor was not pleased with how things were operating, especially since DOE-SR had such high expectations for how facilities should be operated.

Recommendation Discussion

“L-Basin Inventory as a Trial Test for Yucca Mountain”

CAB member Hayes discussed and read each item of the recommendation before opening the floor for discussion.

CAB member Burke asked whether CAB member Hayes was suggesting writing two recommendations or taking the two alternative approaches and putting them into one recommendation. CAB Chair Bridges said he felt the draft recommendation was a responsible approach to dealing with the fuel.

Ms. Patterson, GNAC, said she disagreed with CAB Chair Bridges because she realized everyone wished Yucca Mountain was back on the table, but it was not. She said she felt resources would be wasted if CAB members continued thinking Yucca Mountain was an option. She said she did not think the CAB should recommend spending money on a contingency plan for something that did not exist when the budget was so tight. She suggested changing the words “Yucca Mountain” to “geologic repository.”

CAB member Golden asked if the CAB was allowed to suggest sending material to specific locations, such as Yucca Mountain or WIPP. Mr. Pat McGuire replied the draft recommendation was within the purview of the CAB, but he suggested the CAB should specify where they felt the waste should be shipped; however, he said the CAB should use broader terms when referring to a federal repository. Mr. McGuire explained the Office of Nuclear Energy would use a consent-based process to help establish an end repository.

“Planning for Disposition of SRS Canisters”

CAB member Hayes briefly read and listed each item of the draft recommendation. She mentioned she wanted to change the words “Yucca Mountain” to “federal repository” throughout both draft recommendations and said she would like to vote on both draft recommendations the next day.

Waste Management (WM) Committee Overview, Ed Burke, Chair

Recommendation Discussion

“Budget Requests Sufficient for Liquid Waste Milestones”

CAB member Burke provide a brief background of the proposed recommendation. He opened the floor for comments; however, there was no additional input for the draft recommendation.

“Review Tank Cleaning Criteria”

CAB member Virginia Jones read and discussed the second draft recommendation before opening the floor for discussion. Ms. Wilson suggested eliminating the term “scarce.” She said the nation was in a period of “scarce resources” at the federal level, but she explained that the scarce resources proposed for 2014 at SRS were a result of DOE-HQ decisions. She said she wanted to disconnect the idea because although there were national budget difficulties, the difficulty for SRS resulted from the decision to “starve Savannah River Site.”

CAB Chair Bridges asked Ms. Wilson how the proposed recommendation could be modified to incorporate her concerns. Ms. Wilson said she was uncertain as to what the draft recommendation was requesting. CAB member Jones said the purpose of the draft recommendation was to ensure efficiency by reviewing processes that were already in place. CAB member Burke also said the purpose of the draft recommendation was to review whether DOE-SR was getting the maximum utilization out of the resources being spent to clean High-Level Waste tanks. Ms. Wilson suggested removing the phrase, “in a time when DOE does not have the funds to meet the requirements of the FFA.” Ms. Wilson said the FY 2014 budget was unknown and DOE, as an agency, had enough funding, but DOE-HQ chose to use funding somewhere else.

CAB member Hayes said she was concerned about the proposed recommendation. She said she felt it was moving dangerously close to the issue of whether tanks should be cleaned and grouted according to the FFA.

CAB member Parson asked Ms. Wilson what regulatory drivers determined tank cleanup. Ms. Wilson said cleanup decisions were found in the closure plan, which was reviewed by SCDHEC. Ms. Wilson said the closure plan contained standards for each tank; however, there was not a single regulatory standard for the amount of waste that had to be removed from all tanks. She explained that SCDHEC resisted in establishing a standard waste removal amount because there are circumstances when tanks could be cleaner than a standard amount. Ms. Wilson said each tanks was evaluated on its own, but typically SCDHEC evaluated whether tanks were cleaned as best as possible.

Mr. Kim Hauer, SRR, said there were several criteria for cleaning tanks. He said, “the cumulative effect has to be less than 25 millirem per year, which comes out of the “Code of Federal Regulations.” He explained that the second criteria was that tanks had to be cleaned to the “maximum extent practical,” which meant a tank needed to be cleaned to the point of “diminishing returns,” and not simply stopping once cleanup has gotten to the 25 millirem per year benchmark. He said there were several tank cleaning criteria for each tank; however, meeting one criteria did not necessarily mean another was met. He also explained that SRR’s program incorporated “lessons learned” which enabled SRR to determine the right amount of necessary that were needed to protect the public and environment.

CAB member Parson asked CAB member Burke his opinion about the tank cleaning criteria. CAB member Burke said he wanted tank cleaning criteria to be reviewed to see where diminishing returns were accomplished.

Ms. Rachel McCullough, EPA, encouraged the CAB to consider the long-term goals of the tank cleanup program, which were to protect human health and the environment. She said she understood the CAB wanted a way to make sure tanks were being cleaned out effectively without wasting time and money; however, she said the federal agreements that have been established are the direction in which the tank cleanup program was moving. Ms. McCullough suggested being careful about reevaluating risk goals since that could be a “slippery slope.”

“Liquid Waste Treatment Maximization”

CAB member Burke provided a brief background of the proposed recommendation; however, there was no additional discussion. He said he would like the three draft recommendations to be voted on the next day. CAB member Burke announced the next WM Committee meeting would be held on October 22, 2013, and reviewed presentations scheduled for that meeting.

Strategic & Legacy Management (S&LM) Committee Overview, Clint Nangle, Chair

CAB member Nangle listed the S&LM Committee members before reviewing the committee’s purpose. He provided a recommendation status update, stating that recommendation 288 was open. He announced the next S&LM Committee meeting would be held October 8, 2013, and reviewed presentations scheduled for that meeting, before allowing CAB member Bob Doerr to begin discussion of the proposed recommendation.

Recommendation Discussion

“SRS Heritage Center-- Support to build the museum in downtown Aiken, SC”

CAB member Doerr briefly introduced the draft recommendation before opening the floor for discussion. CAB member Bill Rhoten suggested deleting the terms “initiate” and “awareness” and replace it with “inform.”

Mr. Spears said DOE did not have an issue with collecting artifacts or conducting tours; however, he said the four items of the draft recommendation were not legal since the recommendation was asking DOE to spend appropriated funds to benefit the Heritage Foundation, which was a non-profit entity. Mr. Spears said this recommendation was not something DOE could legally do. CAB member Burke asked Mr. Spears if there was another way to move past the legal restraints. Mr. Spears replied, “I do not know.”

Ms. Patterson, also a member of the Heritage Foundation, explained that SRNS and the Heritage Foundation were already handling two items within the draft recommendation. CAB member Nangle said he wanted to vote on the draft recommendation the next day.

Public Comments

Ms. Suzanne Rhodes, South Carolina League of Women Voters (SCLWV), said the SCLWV sent a letter to Congress regarding underfunding SRS cleanup; however, they had not received a response. Ms. Rhodes said the SCLWV was developing a report, which would be released in October, that supported the safe treatment, long-term storage, and monitoring of nuclear waste. She said she appreciated the CAB’s position that SNF should not come to SRS. A copy of the SCLWV letter to Congress has been attached to this document.

Mr. Mel Galin, public, said he was pleased the CAB was able to hold a meeting in Savannah. He encouraged the CAB to continue drafting recommendations with a “hard edge.”

Mr. Tom Clements, Friends of the Earth (FOE), thanked the CAB for its interest in cleanup issues at SRS. He said on October 3, 2013, the Nuclear Regulatory Commission (NRC) and DOE would have a conference call to discuss vault four at SRS. Mr. Clements encouraged the CAB to request a copy of the SRR presentation and letter written by Mr. Spears regarding monitoring of vault four. Mr. Clements said SRS was currently receiving foreign research reactor (FRR) fuel, but a proposal was being developed to possibly bring liquid High-Level Waste from the Chalk River National Laboratory in Canada to SRS. Mr. Clements said the waste could be treated in Canada, but was not being considered. He said the liquid High-Level Waste could be denatured and solidified in Canada without bringing it to SRS. He also mentioned articles he placed on the public handout table.

~Meeting Adjourned

Meeting Minutes
Savannah River Site Citizens Advisory Board – Full Board Meeting
Savannah, Georgia
September 24, 2013

Tuesday, September 24, 2013 Attendance:

CAB

Thomas Barnes
Artisha Bolding
Dr. Donald Bridges
Ed Burke
William Calhoun-*Absent*
Louie Chavis
Robert Doerr
Kathe Golden
Jessica Grainger
Dr. Rose Hayes
Dr. Virginia Jones
Cleveland Latimore
Clint Nangle
Dr. Marolyn Parson
Larry Powell
Dr. William Rhoten
Earl Sheppard-*Absent*
Harold Simon
John Snedeker- *Absent*
George Snyder
James Streeter-*Absent*
Ed Sturcken
Christopher Timmers
Louis Walters-*Absent*

DOE

Terry Spears, DOE-SR
Sandra Waisley, DOE-SR
Jean Ridley, DOE-SR
Avery Hammett, DOE-SR
Donell Jenkins, DOE-SR
Jack Butler, DOE-SR
Doug Hintze, DOE-SR
Pat McGuire, DOE-SR
Michael Mikolanis, DOE-SR
Bill Taylor, DOE-SR
Gerri Flemming, DOE-SR

Stakeholders

Gary Zimmerman
Tom Clements
Karen Patterson
Laura Walker

Contractors

John Gilmour, SRNS
Jeannette Hyatt, SRNS
Kim Hauer, SRR
Stuart McVean, SRR
Brent Gifford, SRR
Ashley Whitaker, NOVA
James Tanner, NOVA
Jesslyn Anderson, NOVA

Agency Liaisons/ Regulators

Shelly Wilson, SCDHEC
Van Keisler, SCDHEC
Heather Cathcart, SCDHEC
Kyle Vickery, SCDHEC
Trey Reed, SCDHEC
Rachel McCullough, EPA
Kyle Bryant, EPA
Diedre Lloyd, EPA

CAB Chair Donald Bridges opened the meeting. CAB Facilitator, Ashley Whitaker, NOVA, led everyone in the Pledge of Allegiance, and informed meeting attendees of the public comment periods planned throughout the day. She reviewed the Meeting Rules of Conduct, the agenda, and the CABNET feature before inviting CAB Chair Bridges to begin his update.

CAB Chair Opening and Update- Donald N. Bridges, CAB

CAB Chair Bridges called for discussion of the July Full Board meeting minutes. There were no suggestions or comments regarding the minutes. He opened the floor for a vote; the CAB, with no opposition and no abstentions, approved the meeting minutes with 19 votes.

CAB Chair Bridges welcomed everyone to Savannah, GA, which was the first meeting of the year outside the Central Savannah River Area (CSRA). He announced that the November Full Board meeting would be held in the Aiken-Augusta area before he discussed CAB membership. He said the CAB had all 25 members, but it appeared there would be at least three vacancies for the beginning of 2014. He spoke about the Environmental Management Site Specific Advisory Boards (EMSSAB) conference call on August 27, 2013, which discussed budget and program updates as well as the October 15-17 Chair Meeting in Portsmouth, Ohio. CAB Chair Bridges mentioned there were three recommendations that would be discussed at the Chairs Meeting. He said the first recommendation was "Hold Harmless Environmental Management (EM) Funding," which discussed how EM funding should be held harmless as it related to across the board cutbacks in federal funding, operating under continuing resolutions (CR) or

other sequestrations, and how federal budget cuts should not include funding for remediation or cleanup efforts. CAB Chair Bridges asked if there were any comments.

CAB member Ed Burke suggested rewording the phrase “hold harmless.” CAB member Kathe Golden suggested adding verbiage that requested the Department of Energy (DOE) evenly disperse funding across the DOE complex.

The second recommendation was “Graphic representation of DOE-EM legacy waste paths to permanent disposal,” which requested that graphic representations of the current and planned EM legacy waste disposition paths be developed and made publicly available online. CAB Chair Bridges introduced the third proposed recommendation titled, “Establishing a comprehensive and structured recycling program to address radiologically contaminated metals and equipment for free-release.” CAB Chair Bridges discussed public outreach initiatives and stated on July 25, he provided a presentation on the CAB to a visitor from France. He announced Citizens for Nuclear Technology Awareness (CNTA) would hold a forum on October 24, at the University of South Carolina-Aiken (USCA) Etheredge Center to discuss the economic impacts of the nuclear sector. CAB Chair Bridges listed various challenges for 2013 before encouraging the CAB to continue focusing on public involvement and developing recommendations to DOE.

Agency Updates

Mr. Terry Spears, Assistant Manager for Waste Disposition- Department of Energy- Savannah River (DOE-SR)

Mr. Spears welcomed everyone to the meeting before addressing the current budget situation. He said DOE was expecting a CR for fiscal year (FY) 2014; however, there was no such thing yet. He said DOE was one week away from the beginning of FY 2014 and the budget was still unknown. Mr. Spears said there had also been discussions about a government shutdown; however, he stated in the meantime, DOE-SR was expecting a rough year and possibly worse than FY 2013. He said he planned to focus on the status of SRS and FY 2013 successes. He said FY 2013 was tight in terms of budgets, but DOE-SR managed to make progress. Mr. Spears explained that in 2001 remediation of 12,000 cubic meters of legacy transuranic (TRU) waste began; however, within the last week, the last legacy TRU container was remediated at SRS. He said there was less than 500 cubic meters of legacy TRU waste awaiting shipment from SRS to the Waste Isolation Pilot Plant (WIPP). He said shipment of the remaining TRU waste was anticipated to be completed during FY 2014. Mr. Spears addressed the tank closure program and said on August 16, Savannah River Remediation (SRR) began grouting tanks five and six, which were expected to be grouted by the end of the calendar year (CY) 2013. He said given the FY 2014 budget situation, tank closure would slow down, but DOE-SR expected to continue making progress by removing, treating, and stabilizing waste from tanks. Mr. Spears said High-Level Waste vitrification was ongoing for the Defense Waste Processing Facility (DWPF), which resulted in 214 canisters being poured, vitrified, and placed in storage during FY 2014. He said in August, a record was set for treatment activities at DWPF by producing 40 canisters. He stated there were currently over 3,700 canisters of vitrified waste throughout the lifecycle of the DWPF. He discussed how FY 2013 was the best year for Interim Salt Disposition Process stating approximately 1.3 million gallons of material had been processed through the Actinide Removal Process (ARP)/ Modular Caustic Side Solvent Extraction Unit (MCU). Mr. Spears addressed the construction of the Salt Waste Processing Facility (SWPF), and stated the contract modification with Parsons was completed. He explained the contract modification increased the contract cost and reset the construction completion date to December 31, 2016; however, he explained the startup period would take approximately two additional years. He said DOE was pleased that Parsons was awarded DOE’s highest safety award known as the “Voluntary Protection Program Merit Award,” which demonstrated both DOE and Parsons’ commitments to employee safety. Mr. Spears explained a new treatment technique was installed in T-Area pertaining to soil and groundwater remediation. He said vegetable oil had been used to remove chlorinated solvents in the environment, which ultimately saved DOE approximately 27 million dollars and reduced cleanup by 20 years. He provided the link to the newly designed SRS webpage. He welcomed Ms. Sandra Waisley, DOE-SR as the new Co-Deputy Designated Federal Official (DDFO) for the CAB. He also recognized John Barnes, DOE-SR, who had been selected as the DOE Facility Manager of the year.

CAB Chair Bridges asked how difficult the process was to ship material to WIPP. Mr. Spears said once the waste was remediated to a form acceptable for WIPP, the waste was then re-packaged, placed into WIPP shipping container, and must be certified.

CAB member Marolyn Parson asked if the H-canyon missions processing SNF were generating High-Level Waste that was being sent to the tank farm. She asked how were those new missions competing with processing the High-Level Waste that was within the old-style tanks.

Mr. Spears said the Nuclear Materials (NM) program worked hard to minimize the amount of waste being generated for H-Canyon missions. He said the Liquid Waste (LW) and NM programs both work together each year to ensure the LW program would be able to support H-Canyon missions.

Mr. Pat McGuire, DOE-SR, said the LW System Plan explained the process very well since LW program missions were correlated with NM program missions. He said as the NM program developed its system plan, it was important to understand how much waste would be generated; however, the NM program only committed to the amount of waste the LW program specifies it could accommodate. CAB member Parson asked if all the waste that was generated from the SNF disposition ended up in glass canisters. Mr. Spears said the radionuclides would end up in glass canisters at the DWPF. CAB member Parson asked if the newly generated High-Level Waste was being mixed with legacy waste in the tank farm. Ms. Jean Ridley, DOE-SR, explained the waste from H-Canyon was sent to tank 39. She said the waste went through multiple systems, eventually being transferred to tank 51, which was where sludge batches were compiled. Ms. Ridley said the waste was then transferred to tank 40, which was the feed tank for the DWPF.

CAB member Hayes asked if radiation levels of the waste decreased during the process of going through H-Canyon to the DWPF. Mr. McGuire said, "No."

Ms. Rachel McCullough, Environmental Protection Agency (EPA)

Ms. McCullough, EPA, briefly introduced herself and said EPA was briefly furloughed because of the FY 2013 budget difficulties. She said she expected FY 2014 to be another difficult year; however, EPA would work the best it could, but impacts of the FY 2014 budget were unknown. She said with regard to the President's budget request, EPA would still be able to continue its oversight role at SRS, but travel could possibly be limited. She said EPA was concerned with the proposed budget for the SRS LW program and SRS's ability to meet its future milestones. She mentioned Ms. Diedre Lloyd, EPA, would provide a brief introduction of the five-year review process while Mr. Rob Pope, EPA, would provide a more in-depth presentation at the October 8, FD&SR Committee meeting. She said the final five-year review document should be finalized and available to the public in January 2014. Ms. McCullough stated EPA expected SRS to issue proposed plans for action on the Dunbarton Bay Carolina Bay and the ash in A-Area. She said an "Explanation of Significant Difference" would be issued for the L-Area soil and groundwater. She said the proposed FY 2014 President's budget for LW program at SRS would cause potential problems for SRS in the future for meeting Federal Facilities Agreement (FFA) milestones and SCDHEC permit requirements; however, she said DOE-SR, EPA, and SCDHEC agreed to hold regular meetings to discuss ways to address the SWPF construction delays and the reduced LW Program budget. She said EPA looked forward to informing all its stakeholders of decisions regarding these important topics, but she asked the CAB to be careful considering recommendations that were not in line with the current regulatory requirements or agreements in the FFA. She discussed the Environmental Justice (EJ) meetings that EPA and DOE use to share information with communities surrounding SRS. Ms. McCullough introduced Mr. Kyle Bryant, EPA, who discussed the upcoming EJ Teaching Radiation Energy and Technology (TEACH) workshop that would be held September 25-27, 2013.

Ms. Shelly Wilson, South Carolina Department of Health & Environmental Control (SCDHEC)

Ms. Shelly Wilson, SCDHEC, began her update by agreeing with Mr. Spears that last year's successes at SRS were monumental; however, she was disappointed that lack of budget and delay in cleanup could jeopardize future successes. She said SCDHEC continued to focus on High-Level Waste because there was not another location in SC where 37 million gallons of liquid radioactive waste was stored in an aging tank system. Ms. Wilson explained that SRS did not have a lower amount of risk than any other site in the DOE complex since "eight of the tanks at SRS were either partially or wholly sitting in the groundwater table." She said DOE reported to SCDHEC in the spring and summer of 2013, that there was either "rainwater intrusion or groundwater intrusion into the tank system." She said SCDHEC was concerned about construction of the SWPF and the FY 2014 budget. Ms. Wilson explained that the delay in SWPF startup caused future treatment to be slowed down because the facility could potentially reduce

the amount of High-Level Waste at SRS; however, the FY 2014 budget, would not allow SRS to continue cleanup at its prior rate. She said the FY 2014 budget would most likely force DOE-SR to slow down waste treatment, which would lead to tank closure delays and create tank space shortages. She referenced CAB member Parsons' question about how H-Canyon interacted with the availability of tank space. She said Department of Energy- Headquarters (DOE-HQ) continued adding risk to SRS by wanting SRS to receive SNF and other NM from sites across the United States and world; however, DOE-HQ did not provide SRS the budget to accommodate that risk by processing waste at the full or maximum capacities. She said SCDHEC continued to press DOE into asking for the funding to treat waste and reduce risk. She said SCDHEC continued putting forward the need for SWPF to be completed as soon as possible. She said in order to continue risk reduction, any delay in SWPF construction should be mitigated by increasing operations at the ARP/MCU interim processing facility as well as treatment through small column ion exchange. She thanked the CAB for its recommendations and letters emphasizing the need for adequate funding to continue waste treatment. She said SCDHEC understood an economic crisis was occurring; however, she said she felt "picked on" when the LW budget at SRS took the largest EM budget cut of any site in the DOE Complex. She said SRS deserved its fair share of funding to reflect its past successes.

CAB member Golden asked Ms. Wilson about pollutants that were being released into streams from active areas at SRS. Ms. Wilson explained there were some continuing operation areas that released emissions into the streams, but permits were in place for those areas to ensure human and environmental health were protected.

CAB member Hayes asked if there were any regulations or public laws involving the restriction of incoming materials until the path forward for materials already at SRS were identified. Ms. Wilson said SCDHEC did not have a law that could restrict plutonium or SNF coming into SRS.

Public Comments

Ms. Karen Patterson, Governors Nuclear Advisory Council (GNAC), said GNAC focused its efforts on working to make sure the High-Level Waste was vitrified into glass canisters, because by then "99 percent of the risk reduction is done." She announced that this spring the University of Georgia Press published a book written by Dr. Kari Frederickson titled, "Cold War Dixie." Ms. Patterson explained that Dr. Frederickson researched how Cold War funding economically helped the south.

Strategic & Legacy Management (S&LM) Committee Overview- Clint Nangle, Chair

CAB member Clint Nangle reviewed his presentation from the day before. He announced the next S&LM Committee meeting was scheduled for October 8, 2013.

Recommendation Voting

"SRS Heritage Center-- Support to build the museum in downtown Aiken, SC"

CAB member Nangle stated the S&LM Committee had discussed input provided the day before; however, the S&LM Committee wished to table the draft recommendation and discuss it again at the October 8, 2013 meeting.

PRESENTATION: Update on Military Training at SRS – Jack Butler, DOE-SR

Mr. Butler stated the purpose of his presentation was to fulfill an S&LM Committee Work Plan topic by providing an update on military training activities conducted at SRS during the last year. He listed the topics he planned to discuss within his presentation before providing background information of how SRS became involved with supporting military training activities. He said the United States (U.S.) Army had a shortfall of approximately five acres of maneuver training land across the country, which resulted from base closures, technology advances in weapons, and environmental restrictions; however, the strategies that the Department of Defense (DOD), DOE, and SRS were developing were to maximize the management of existing federal properties across all federal agencies. He said national security was the "common thread" between DOE's missions at SRS and at DOD. He explained the military exercises performed at SRS were patriotic, compatible with SRS's mission, and provided beneficial training capabilities. Mr. Butler discussed the Memorandum of Understanding (MOU), which was signed by the Secretary of Energy and Secretary of the Army in September 2007. He said the MOU allowed both agencies to pursue training

operations at SRS; however, in September 2009, an Interagency Agreement (IAG) was signed between SRS and Fort Gordon, which allowed the actual military training programs to begin at SRS. He briefly listed other signed documents and key points found within the Joint Standard Operating Procedure (JSOP) that allow the U.S. military to conduct training operations at SRS. He said all branches of military have participated in training activities at SRS. He briefly listed and discussed several military training exercises that had been conducted at SRS since April 2011. He explained that all training events were pre-coordinated, approved by DOE, and were limited to specific areas during specific times. Mr. Butler stated that public notices were released to employees and all the surrounding communities and emergency personnel to notify them of military exercises. He provided several images of different training routines, military vehicles, and aircrafts used at SRS. He said there had not been any injury cases or destruction to DOE-SR property or the environment. He explained that by conducting military training exercises at SRS, the U.S. military was exposed to unique training environments while continuing to build strong partnerships with DOE-SR and the Savannah River National Laboratory (SRNL).

CAB Chair Bridges asked what the largest group of military personnel that had been trained at SRS. Mr. Butler said the largest group was approximately 60 to 70 troops.

CAB member Jessica Grainger asked if there was ever an incident where the military personnel had ever gone into a location they were not allowed to be in. Mr. Butler said there was one occasion, but controls were established to make sure an incident similar to this situation did not occur again.

Waste Management (WM) Committee Overview- Ed Burke, Chair

CAB member Burke listed the WM Committee members and reviewed the committee's objective. He provided a recommendation status update stating recommendations 269, 290, 297, 298, 299, 300, 301, 304, and 305 were open; however, he said he hoped to finalize the status of the nine recommendations.

Recommendation Work Time

CAB member Burke proposed changing the status from "open" to "closed" for the following recommendations:

- 269: "Semi-Annual Review of the Inputs and Assumptions Used to Develop the Liquid Waste System Plan"
- 290: "Assess Feasibility of Disposition of SRS Canisters to WIPP"
- 297: "Concern the Salt Waste Processing Facility will not open according to the schedule of Liquid Waste System Plan Rev. 17"
- 298: "Trial Disposition Program for SRS High Level Waste Canisters"
- 299: "Separation of National Nuclear Waste Programs (Defense Nuclear Waste and Commercial Power Nuclear Waste)"
- 300: "The Savannah River Site Citizens Advisory Board Concerns Regarding Interim Storage of Commercial Spent Nuclear Fuel and Other Nuclear Wastes and Materials at the Savannah River Site"
- 301: "Demonstration Storage at WIPP Program for SRS High Level Waste Canisters"
- 305: "Replacing Glass Waste Storage Building (GWSB) #3 with GWSB #1"

Recommendation Voting

"Budget Requests Sufficient for Liquid Waste Milestones"

CAB member Burke discussed the recommendation and asked if there were any comments; however, there was no additional input and CAB Chair Bridges called for a motion. The CAB approved the recommendation with 17 votes of approval, no oppositions, and no abstentions.

"Review Tank Cleaning Criteria"

CAB member Burke reviewed the recommendation and reviewed changes from the previous day. CAB Chair Bridges called for a motion and asked if there was any further discussion.

CAB member Golden said she did not think the CAB should ever send forth a recommendation that showed the CAB was willing to lower its standards since she felt cleanup standards should be maintained. The CAB approved this recommendation with nine votes of approval, seven oppositions, and no abstentions.

“Liquid Waste Treatment Maximization”

CAB member Burke reviewed the two items of the recommendation before CAB Chair Bridges called for a motion and asked if there was any further discussion.

CAB member Hayes said she did not feel it was right to ask DOE to conduct reviews on technologies and procedures when we were trying to urge DOE to provide money to keep going forward. The CAB approved this recommendation with 13 votes of approval, four oppositions, and two abstentions.

A copy of the three recommendations have been attached to this document.

**PRESENTATION: ARP/MCU Operating Performance and Next Generation Solvent Outage –
Brent Gifford, SRR**

Mr. Gifford said the purpose of his presentation was to satisfy a WM Committee 2013 Work Plan topic by providing an update on the FY 2013 operating performance of the Actinide Removal Process (ARP)/ Modular Caustic Side Solvent Extraction Unit (MCU) and the Next Generation Solvent (NGS) outage. He provided copies of the “SRS Waste and Material Flow Path” and “Salt Disposition Process Overview” diagrams to illustrate the locations and processes of the ARP/MCU. He said the mission of the ARP/MCU was to bridge the gap until the Salt Waste Processing Facility (SWPF) was complete by processing salt solution for disposal. Mr. Gifford said actinides and strontium were removed through the ARP, while the MCU removed cesium before sending the concentrate to DWPF to be put into glass. He said improvements for continued operations were completed in FY 2012, while reliability improvements and deployment of the NGS were in progress. He discussed ARP/MCU operational performance plans for FY 2013, which included a weekly processing record of over 83,500 gallons a new salt processing record with over 1.3 million gallons during FY 2013. He said the ARP/MCU had processed over 4 million gallons of salt solution.

Ms. Wilson asked how much solution the ARP/MCU could process during FY 2014 based on the current President budget. Mr. Spears said current planning anticipated the ARP/MCU would be able to process on million to one and a half million gallons.

Mr. Gifford said ARP/MCU continued to gain process chemistry, equipment reliability, and operational maintenance knowledge and experience for FY 2013, while also preparing for the Integrated Process Outage that would introduce the NGS into MCU, implement reliability improvements, and initiate prerequisites for the FY 2014 ARP/MCU NGS process demonstration before he discussed NGS enhancements. He said the NGS, which was made of four components, showed improved performance since the modified extractant was included and set the stage for increased MCU throughput. He said numerous hours of NGS testing demonstrated significant improvement potential in the removal of cesium for MCU. He displayed several pictures of key integrated processing facilities used in the ARP/MCU process before he mentioned all FY 2013 NGS milestones were met on or ahead of schedule. He explained that preparations were underway to introduce the NGS beginning late FY 2013; however, modifications had to be made to the facility before supporting the next generation solvent. He said the ARP/MCU process continued to provide successful interim salt processing while the lifecycle enhancements set the stage for extended ARP/MCU operations. Mr. Gifford explained that implementation of the NGS would provide a “lower curie cesium waste stream” to Saltstone for the continued operational life of MCU and with additional funding, set the stage for increased throughput.

CAB member Burke asked if all 37 million gallons of High-Level Waste needed to go through the ARP/MCU. Mr. Gifford explained that only a portion of the material went to ARP/MCU. CAB member Burke asked how long it would take the ARP/MCU to process material if SWPF never came online. Mr. Stuart McVean, SRR, said the 37 million gallons would generate 100 million gallons of solution that has to go through a salt treatment process. Mr. McVean said, “At one million gallons a year, 100 million gallons takes a long time.”

Public Comments

Mr. Gary Zimmerman, public, suggested that presenters provide visualizations when referring to specific quantities of information within a presentation. He explained how practicing this technique would make the information easier to understand.

Mr. Tom Clements, Friends of the Earth (FOE), said the Chair of the South Carolina Sierra Club, Ms. Susan Corbett, asked him to relay the message that the Sierra Club appreciated the CAB and SCDHEC for discussing the need for adequate funding for High-Level Waste cleanup at SRS. He said the conference call between the Nuclear Regulatory Commission (NRC), DOE, and SRR was still scheduled for October 3.

Nuclear Materials (NM) Committee Overview- Rose Hayes, Chair

CAB member Hayes reviewed her presentation from the day before and said she wanted to address the status of recommendations 306, 307, 308, and 309.

CAB member Hayes discussed the DOE responses for each of the four open recommendations. She said she wanted to change the status of recommendations 306, “Chemical Separation or Partitioning and Transmutation (P/T) of Used Nuclear Fuel and Defense High Level Radioactive Waste” and 308, “Request for Long-Term Assessment: Disposition of Research Reactor Fuels stored in L-Basin” to “closed with exception.”

CAB member Hayes explained that she also wanted to leave recommendations 307, “Transferring Materials in L-Basin to Auxiliary Dry-Cask Storage” and 309, “Consider Nuclear Waste Management Plan for Interim Storage of Defense Waste in Yucca Mountain, and Temporary Storage of Used Nuclear Fuel at Generation Sites” open until more information was available.

PRESNTATION: Use of Plutonium Equivalent Curies for Measuring Risk – Michael Mikolanis, DOE-SR

Mr. Mikolanis said the purpose of his presentation was to discuss the concept of using Plutonium Equivalent Curies (PEC) as a method of measuring relative risk between nuclear facilities at SRS; however, he said he planned to share DOE’s perspective of how PEC did not adequately measure risk. He said risk was defined as “the possibility of suffering harm or loss,” which implied that risk was equal to the “probability of a bad thing happening multiplied by the consequences of a bad thing.” Mr. Mikolanis stated DOE typically measured risk in terms of consequences because the probability of something happening was very subjective and difficult to predict. He also explained that DOE discussed risk in terms of dose or consequence that a co-located worker or member of the public could receive during an accident at a facility. He discussed Risk Management and the Safety Based Design Process, which was the process DOE used to manage the amount of risk in facilities. He provided a chart of the Safety Based Design Process and briefly explained each step of the process, beginning with the need for each facility to have a conceptual design. He said the conceptual design included systems and processes involved in a facility’s daily operations. He said once the conceptual design was identified, a risk determination, including a hazard analysis, began. He said a hazard analysis involved several engineers determining all the potential hazards that could occur within a facility, including any potential way materials could be released into the environment. He said the third phase involved the risk determination maturing into an accident analysis, where the worst-case dose would be calculated if material were released into the environment. He said after the accident analysis was conducted, the rest of the Safety Based Design Process involved choosing controls to manage the identified risks, classifying those controls according to safety functions, and then understanding the safety function to create design requirements. Mr. Mikolanis provided an overview of the accident analysis stage before he explained how dose consequences, from a release of radioactive material, were calculated. He said multiplying Material at Risk (MAR), Damage Ratio (DR), Airborne Release Fraction (ARF), Leak Path Factor (LPF), Dispersion, and Dose Conversion Factor (DCF) was the equation for calculating radiological consequences. He defined each factor within the equation before explaining that PEC was only one expression within MAR, which was one of the six factors used to calculate risk. He explained that not all curies pose the same hazards to the environment by saying, “a curie of vitrified waste in the GWSB is not the same hazard as one curie of High-Level Waste, or one curie of powder plutonium stored in a glovebox in H-Canyon.” He said, “PEC was one component of a component of risk.” Mr. Mikolanis explained that using PEC as a risk surrogate neglected several important factors in determining risk such as equipment malfunction, if the material was

dispersible, energy availability for dispersion, leakage from the facility, and likelihood of event occurrence. Mr. Mikolanis said using PEC as a common denominator for facilities at SRS was not the best method of adequately measuring risk. He also explained that DOE had measured progress at SRS for several years and he encouraged the CAB to understand the metrics that were used in different facilities since those metrics were already the best-suited methods for those processes.

CAB member Chris Timmers asked Mr. Mikolanis what “bounding estimate” meant. Mr. Mikolanis replied that a bounding estimate assumed a very conservative estimate that was greater and gave you the worst-case consequences out of all the individual scenarios.

CAB member Hayes asked why it was not possible for a benchmark to be developed that would categorize the levels of radioactivity for all materials within each facility at SRS. Mr. Mikolanis said it was possible to calculate how many curies were within a facility; however, now that cleanup and remediation were underway at SRS, DOE was only worried about the risks and hazards associated with the curies currently at SRS. He said knowing how many curies were in a facility was not as important in terms of the risk and hazards apposed when you consider how many materials could be released in an accident. CAB member Hayes asked how radioactivity was measured. Mr. Mikolanis stated DOE used two different metrics for determining the amount of radioactivity, in terms of cleanup, at SRS. He said millirem, pertaining to dose and consequences, was used to measure relative risk while performance indicators, which are not associated with the dose consequences, were used to measure progress.

Recommendation Voting

“L-Basin Inventory as Trial Test for Yucca Mountain”

CAB member Hayes reviewed the four items of the recommendation before CAB Vice Chair Harold Simon called for a motion. The CAB approved this recommendation with 17 votes of approval, no oppositions, and no abstentions.

“Planning for Disposition of SRS Canisters”

CAB member Hayes reviewed the recommendation and asked if there were any comments. CAB member Burke asked Mr. Spears if an organization was currently charged with locating a repository. Mr. Spears said the DOE strategy for handling the Blue Ribbon Commission (BRC) recommendations was that the Office of Nuclear Energy had the principal lead for locating a repository.

CAB Vice Chair Simon called for a motion and the CAB approved this recommendation with 17 votes of approval, no oppositions, and no abstentions.

A copy of these recommendations have been attached to this document.

Facilities Disposition & Site Remediation (FD&SR) Committee Overview- Marolyn Parson, Chair

CAB member Parson reviewed her presentation from the day before and stated the FD&SR Committee had two open recommendations. She said recommendation 293 would remain open until the FD&SR Committee received more budget information. She stated the CAB received a briefing in March about how DOE planned to clean up building 235-F in response to the Defense Nuclear Facility Safety Board (DNFSB) recommendations. She said she spoke with Mr. Doug Hintze, DOE-SR, who agreed to provide a specific budget update about plans for DOE-SR to clean up building 235-F. CAB member Parson said recommendation 294 would also remain open until the CAB was able to discuss the SRS website with DOE at the end of the year. She reminded everyone that the next FD&SR Committee meeting was scheduled for October 8, 2013, and discussed presentations for that meeting. She welcomed Mr. Donnell Jenkins, DOE-SR, to begin his presentation.

PRESENTATION: Overview of SRS Energy Management Program – Donell Jenkins, DOE-SR

Mr. Jenkins said the purpose of his presentation was to satisfy a 2013 FD&SR Work Plan topic by providing an overview of how the SRS Energy Management Program enabled SRS to achieve its energy efficiency goals and

requirements. He listed the important “drivers,” which included various DOE orders and federal directives that established criteria for the Energy Management Program. He said the first goal of the Energy Management Program was to reduce the amount of energy consumed per square foot, known as “energy intensity,” by 30 percent before FY 2015. He explained how the new Biomass Cogeneration Facility reduced energy intensity by 43.2 percent during FY 2012, which was a 6.4 percent reduction from FY 2012 to FY 2011. He said in order to continue reducing energy intensity levels at SRS, SRNS planned to continue replacing old heating, ventilation, and air conditioning systems with newer units that were equipped with higher seasonal energy efficiency ratios, continue evaluating facility audits, and continue implementing “Peak Alerts” to control the demand of purchased electricity. Mr. Jenkins stated the goal for “metering” at SRS was to have individual buildings/processes metered for 90 percent of electricity by October 1, 2012, while 90 percent of steam and chilled water needed to be metered by October 1, 2015. He said the SRS Metering Plan, developed in FY 2011, collected energy data from over 200 electrical meters and 15 steam meters to provide energy use data. He explained that SRS used meter data as part of a comprehensive billing and cost allocation system; however, he mentioned that all buildings at SRS were not individually metered because it was not cost effective and HQ was satisfied with SRS’s current metering plan. He said SRS planned to continue metering multiple processes and buildings as well as high performance sustainable buildings.

He discussed “renewable energy,” stating SRS accomplished its goal of having at least 7.5 percent of annual electricity consumption produced by renewable sources. He said since the new Biomass Cogeneration Facility went online in FY 2012, more than 1.67 billion pounds of steam and 97,000 megawatts of electricity were generated during the performance period, resulting in the consumption of 221,000 tons of clean biomass. He said the project helped reduce over one billion gallons of water from the Savannah River and 100,000 tons of greenhouse gas emissions every year. He said SRS continued to meet and exceed all renewable energy goals required by federal directives, which resulted in an operational energy savings of 34 million dollars. He said SRS planned to continue using the new Biomass Cogeneration Facility to produce steam and up to 20 megawatts of “green” power. Mr. Jenkins discussed another Energy Management Program goal known as the “high performance sustainable buildings-existing buildings” initiative, stating by FY 2015, 15 percent of existing buildings at SRS needed to be larger than 5,000 gross square feet, in order to be compliant with the five guiding principles of high performance sustainable buildings. He said SRS contracted with Energy Ace for the project and approximately 546,000 square feet of building space were evaluated. He mentioned a new management sanctioned team was developed to oversee High Performance and Sustainable Building program activities in FY 2013; however, he said a plan was being developed to implement policies and handle any actions in FY 2014 and 2015 and any information collected from facilities would be included within the EPA Portfolio Manager database.

Mr. Jenkins discussed “energy and water evaluations” stating the Energy Independence and Security Act of 2007 required SRS to evaluate 25 percent of its facilities every year. He explained that the Sustainability Program Office, provided funding in FY 2012 to perform energy and water conservation evaluations, with the help of Enviro-Management and Research, Inc., for 2.8 million square feet of covered facilities at SRS, to determine what energy conservation measures could be implemented. Mr. Jenkins said DOE planned to evaluate the report conducted by Enviro-Management and Research, Inc., in FY 2013 and make a recommendation to HQ, as well as include any facility information in the EPA Portfolio Manager database. He stated SRS’s “fleet reduction” goal was to have a two percent annual reduction in fleet petroleum consumption by 2020. He said SRS reduced its petroleum usage by approximately 19 percent in FY 2012; however, SRS was implementing a 35 percent reduction of vehicles over the next three years. He said in order for SRS to accomplish the fleet reduction goal, SRS was participating in the General Services Administration (GSA) Plug-In Electric Vehicle Pilot program as well as using a system to maximize ethanol 85 (E85) alternative fuel vehicles. Mr. Jenkins discussed “electronic stewardship,” stating SRS established the goal to implement power management settings on 100 percent of eligible personnel computers, laptops, and monitors by FY 2012. He said leased desktop computers, laptops, and monitors were programmed to efficient power management settings upon receipt from the customer and met the Electronic Product Environmental Assessment Tool and Energy Star requirements. He summarized SRS’s accomplishments, planned actions for all Energy Management goals, and asked if anyone had any questions.

CAB member Artisha Bolding thanked Mr. Jenkins for his presentation and asked when electric vehicles would be available at SRS. Mr. Jenkins said DOE-SR hoped to have an electric vehicle at SRS by FY 2014.

CAB member Doerr asked what the 34 million dollars a year in energy and operational savings resulted from. Mr. Jenkins replied that the 34 million dollars was the annual savings for the Biomass Cogeneration project.

CAB member Bill Rhoten asked if any of the biomass for the Cogeneration Facility came from SRS. Mr. Jenkins explained that the biomass materials were not generated at SRS.

VIDEO: Getting to Know the Five-year Review – Diedre Lloyd, EPA

Ms. Lloyd said she planned to provide a video about the five-year process; however, she said Mr. Rob Pope, EPA, was scheduled to provide a more detailed presentation at the October 8, FD&SR Committee meeting. She said the five-year review process was a legal requirement and was conducted to ensure all the SRS cleanup remedies remained protective of human health and the environment. She said on August 31, 2012, the first public notice was published to inform citizens a fourth, five-year review would be conducted at SRS. She stated in November 2012, DOE-SR submitted its five-year review to EPA and SCDHEC, which both agencies reviewed and responded to in April 2013. Ms. Lloyd stated in July 2013, DOE-SR submitted comments back to EPA and SCDHEC; however, those comments were currently being reviewed and were expected to be completed in October. Ms. Lloyd said once EPA, SCDHEC, and DOE signed the five-year review, a public notice could be issued around February 2014.

CAB member Hayes asked when the public could provide input to DOE-SR for the SRS five-year review. Ms. Lloyd said the first public notice to members of the public was released on August 31 in local newspapers; however, the public was welcome to share input with DOE any time during the process.

Recommendation Voting

“Public Meetings on Background and Status of High-Level Waste Tank Closure Program”

CAB member Tom Barnes reviewed the proposed recommendation before opening the floor for comments.

CAB member Burke said he would feel much better if the public meetings proposed within the recommendation were conducted as part of the CAB’s normal meetings rather than additional meetings. CAB member Hayes said she appreciated the draft recommendation since informing the public had been brought to the CAB’s attention several times. CAB Vice Chair Simon called for a motion and the CAB approved the recommendation with 14 votes of approval, one opposition, and one abstention.

A copy of this recommendation has been attached to this document.

Administrative & Outreach (A&O) Committee Overview – Nina Spinelli, Chair

CAB member Nina Spinelli announced that all CAB members who were eligible for reappointment had reapplied for their next term. She said the CAB received 21 applications during the 2014 Membership Campaign; however, she said even though this year’s campaign was over, the CAB Support Team accepted applications year-round. She said the term for new CAB members would begin in March 2014 before she mentioned that CAB presentations for the Columbia, Aiken, and Kershaw county Rotary Clubs, the Lexington Chamber of Commerce, and the South Carolina Lions Association were pending. She reminded each Committee Chair to provide the CAB Support Team with a brief summary for the upcoming Board Beat Newsletter about their Committee’s progress through the year.

Public Comments

There were no public comments.

~Meeting adjourned

Savannah River Site

Citizens Advisory Board

Recommendation 310

Budget Requests Sufficient for Liquid Waste Milestones

Background

The Savannah River Site (SRS) has 37,000,000 gallons of liquid nuclear waste remaining from the various defense missions dating back to the early 1950's. The State of South Carolina considers this waste the most dangerous environmental issue in the state. Since the mid 1990's the Department of Energy (DOE) site has assumed the mission of cleaning the tanks, stabilizing the wastes and decommissioning the tanks.

This cleanup mission is the subject of an enforceable agreement with the South Carolina Department of Health and Environmental Control (SCDHEC) and the United States Environmental Protection Agency (EPA) referred to as the Federal Facility Agreement and General Closure Plans (FFA). This agreement requires the Department Of Energy to request funding for and execute plans that would clean up the 20 remaining tanks by 2022.

Cleanup consists of emptying the tanks by a. processing the liquid fraction through the Actinide Removal Process (ARP) and the Modular Caustic Units (MCU) until a larger facility is operational i.e. The Salt Waste Process Facility (SWPF) in operational. The contaminated water from these separation processes is stabilized as grout in the Saltstone facility and the highly radioactive material is put into glass canisters in the Defense Waste Processing facility. The glass canisters are being stored at SRS until a long term repository is available.

Liquid Waste System Plan Revision 18 calls for the cleaning and closing of 16 tanks at dates later than agreed to in the FFA. In addition tank cleanup and closure will be delayed from 2022 as required by the FFA until 2028.

The FFA requires that the DOE request sufficient funding to complete tank cleaning and closing on schedule. In the 2014 budget, the DOE is not asking for sufficient for SWPF or Liquid Waste Cleanup to meet the FFA commitments. DOE has shifted funds from SRS to Hanford and other locations leaving SRS to absorb the entire shortfall in the DOE budget request.

The SRS Citizens' Advisory Board understands the current financial problems for the Federal Government however these problems do not discharge the DOE's obligations to request sufficient funding to meet their obligations. Requesting sufficient funding means the sufficient funding be requested under all budget scenarios not just selected scenarios.

The plans of the DOE to not request the proper funding to meet the FFA commitment is undermining the credibility and transparency of the DOE at a time when community support is

needed more than ever. In addition penalties from the State of South Carolina are a real possibility as well as an undermining of the cooperative attitude of the state and local citizens.

Recommendations

The Savannah River Citizens Advisory Board Recommends:

1. The Department of Energy include in the 2015 budget request sufficient funding to meet all FFA commitments to clean and close the liquid waste tanks at SRS.
2. In the future, all budget requests will contain the sufficient funding to meet FFA requirements in all the scenarios submitted.

Savannah River Site

Citizens Advisory Board

Recommendation 311
Review Tank Cleaning Criteria

Background

The Savannah River Site (SRS) has 37,000,000 gallons of liquid nuclear waste remaining from the various defense missions dating back to the early 1950's. The State of South Carolina considers this waste the most dangerous environmental issue in the state. Since the mid 1990's the Department of Energy (DOE) site has assumed the mission of cleaning the tanks, stabilizing the wastes and decommissioning the tanks.

This cleanup mission is the subject of an enforceable agreement with the South Carolina Department of Health and Environmental Control (SCDHEC) and the United States Environmental Protection Agency (EPA) referred to as the Federal Facility Agreement (FFA). This agreement requires the Department Of Energy to request funding for and execute plans that would clean up the 20 remaining old style tanks by 2022.

Cleanup consists of emptying the tanks by processing the liquid fraction through an extraction process such as ARP / MCU or the Salt Waste Process Facility (SWPF). The contaminated water from these separation processes is stabilized as grout in the Saltstone facility and the highly radioactive material is put into glass canisters in the Defense Waste Processing facility. The glass canisters are being stored at SRS until a long term repository is available.

The emptied tanks are further cleaned by various processes including mechanical, chemical and/or vacuum technologies to remove the highly radioactive radionuclides to the maximum extent practical. The FFA requires that the tanks be cleaned until the three agencies (DOE, SCDHEC and EPA) agree waste removal activities may cease. More than one technology and multiple waste removal campaigns per technology were deployed when cleaning tanks 18, 19, 5 and 6 for closure.

The public protective standard considers someone living at the facility boundary (100 meters from the edge of a tank) and consuming all of their food and drink from the land to have an increased risk of exposure of only 25 mrems at any time in the next 10,000 years. As a benchmark, the average exposure from all sources for someone living in America is over 600 mrems. Almost 50% of this exposure is from nuclear medicine which has grown greatly in the last 30 years.

Liquid Waste System Plan Revision 18 calls for the cleaning and closing of 20 tanks at dates later than agreed to in the FFA. In addition tank cleanup and closure will be delayed from 2022 as required by the FFA until 2028.

The SRS CAB is questioning the past practice of cleaning tanks. The CAB is also questioning whether public risk scenarios should be reviewed to more realistically balance the current risks from delayed cleanup with the long term risks of closed tanks.

Recommendations

The Savannah River Site Citizens Advisory Board recommends:

1. The DOE review the past level of clean-up to determine if efficiencies achieved from a different balance of short term and long term risk were applied it would free-up money and resources to accelerate the cleanup of additional tanks reducing short term risks without creating increased long term risks.
2. The DOE review evaluated risk scenarios to determine if more realistic risk scenarios would free-up resources for short term risk reduction at SRS or other locations and still protect the public in both the long and short term.

Savannah River Site

Citizens Advisory Board

Recommendation 312
Liquid Waste Treatment Maximization

Background

The Savannah River Site (SRS) has 37,000,000 gallons of liquid nuclear waste remaining from the various defense missions dating back to the early 1950's. The State of South Carolina considers this waste the most dangerous environmental issue in the state. Since the mid 1990's the Department of Energy (DOE) site has assumed the mission of cleaning the tanks, stabilizing the wastes and decommissioning the tanks.

This cleanup mission is the subject of an enforceable agreement with the South Carolina Department of Health and Environmental Control (SCDHEC) and the United States Environmental Protection Agency (EPA) referred to as the Federal Facility Agreement and General Closure Plans (FFA). The Liquid Waste System Plan Revision 18 presents a plan that has 20 of the remaining tanks being closed at dates beyond those agreed to in the FFA.

Currently cleanup consists of emptying the tanks by processing the liquid fraction through the Actinide Removal Process (ARP) and the Modular Caustic Units (MCU). A larger facility using similar technology, the Salt Waste Processing Facility (SWPF), is being constructed. The SWPF was expected to be complete in 2015 but the current target is to be complete in 2018. An additional technology exists that can facilitate the treatment of the liquid waste i.e. Small Column Ion Exchange (SCX). In recent years, technological improvements including improved titanate solvents have greatly improved the performance and capacity of the currently operational ARP / MCU units. Additional solvent research appears promising.

After the liquid fractions from the storage tanks has been processed by one of the previously mentioned technologies, the contaminated water from these separation processes is stabilized as grout in the Saltstone facility and the highly radioactive material is put into glass canisters in the Defense Waste Processing facility. The glass canisters are being stored at SRS until a long term repository is available.

The key to reducing the risk posed to the residents of South Carolina and Georgia from the liquid waste is the processing of the liquid waste through one of the potential separation processes. Overall risk can be reduced most rapidly and effectively by emptying the least reliable tanks as quickly as possible. In order to reduce the maximum risks most quickly, the Department of Energy (DOE) should review the existing technologies and feasible technological improvements and determine the optimal way to allocate resources. The goal would be to obtain the highest system through put until the SWPF was fully operational.

Recommendations

The Savannah River Citizen's Advisory Board recommends:

1. The DOE review the available technologies for liquid waste treatment and any feasible technological improvements and determine the optimal way to allocate resources to reduce risk most rapidly until the SWPF facility can be completed.
2. The DOE report to the CAB by January 2014 on their findings if an approach is determined to be available that can reprioritize resources to reduce risk more rapidly.

Savannah River Site

Citizens Advisory Board

Recommendation 313

L-Basin Inventory as Trial Test for a Federal Repository

Background

Currently, the capacity for typical Research Reactor Used Nuclear Fuel (RRUNF) assemblies in L-Basin is 90% full, with 3,181 bundles. The capacity for High Flux Isotope Reactor (HFIR) Fuel Racks, also stored in L-Basin, is 100% full, with 120 cores in the basin. There are also over 400 individual Isolation cans stored in the basin, with 12 oversized cans containing a portion of the 400.

Implementation of the Enriched Uranium Disposition Project would have resulted in L-Basin being emptied by around 2019. If the Augmented Monitoring and Condition Assessment Program (AMCAP), developed in January 2012, is implemented it is predicted that the basin could store its used/spent nuclear fuel inventory for another 50 years. The AMCAP program includes periodic examination of bundled fuel; assessment of fuel in Oversized Isolation Cans, core sampling from C-Basin to assess L-Basin basin structural integrity; and continuation of existing programs which includes:

- Basin Water Chemistry
- Corrosion Evaluation
- Structural Integrity
- Aging Facility Management Assessments
- Infrastructure Maintenance

On 3/26/13, an Amended Record of Decision (AROD) was signed which allows for processing up to 1,000 bundles of L-Basin RRUNF bundles and 200 HIFR cores. Processing, in H-Canyon, would eliminate the need for re-racking the basin to make room for anticipated future domestic and foreign receipts.

Comments

Currently, the capacity for typical RRUNF assemblies is 90% full, with 3,181 bundles. Without the 2013 AROD actions, the most probable projections indicate that L-Basin inventory would exceed 3,950 bundles of RRUNF by 2019, and 4,250 by 2033. Required geometric spacing requirements may no longer be possible.

Certain of the 400 HIFR cores are in urgent need of processing due to container degradation. Others cannot be processed through H-Canyon due to their zirconium cladding. It is also likely that H-Canyon processing will be reduced by the 2014 budget reduction. In addition to the other obstacles to continued safe storage of L-Basin inventory, a portion of the L-Basin water chemistry has been invaded by a "cobweb" bacterial growth on the top of some fuel bundles.

In addition to H-Canyon processing, dry cask storage was under consideration at SRS in order to augment need storage capacity in the L-Basin. Each dry cask would hold 36 assemblies and, in order to completely deinventory L-Basin, 120 10ft by 2ft casks would be needed. This avenue of disposition has also become problematic. The Nuclear Regulatory Commission (NRC) released an April 2013 report

indicating that “premature degradation of spent fuel storage cask structures and components” had occurred in some Peach Bottom Atomic Power Station (TN) dry casks due to environmental moisture. Budgetary cuts have also impacted the dry cask concept at SRS. Plans for a Dry Storage System have now been deferred.

There is no current date or pathway set for dispositioning used/spent nuclear fuel, HFIR cores, and isolated cans from L-Basin and SRS. There is no current plan to discontinue anticipated future foreign and domestic receipts so the inventory will continue to grow in the basin, with required geometric spacing requirements challenged.

Recommendation

Given the urgent need to find increased storage capacity at the SRS L-Basin facility, the need to process certain at-risk materials in the basin, and the deferment of disposition pathways due to current budget exigencies, the Savannah River Citizen’s Advisory Board recommends:

1. DOE develop a contingency plan for utilizing older and critical eligible L-Basin materials in a trial test at a federal repository in order to develop processing, containerization, transporting and permanent storage requirements for securing U.S. nuclear waste and used/spent nuclear fuel in a deep geologic national repository.
2. Provide the necessary funding for developing the contingency plan in 2014.
3. Provide regular interim status reports to SRS CAB during the contingency plan development period.
4. Provide a completed contingency plan to the SRS CAB by FY 2016.

Savannah River Site

Citizens Advisory Board

Recommendation 314
Planning for Disposition of SRS Canisters

Background

Disposition of SRS defense waste in the form of DWPF canisters to an off-site location has been in the planning stage for a number of years. The Savannah River Site (SRS) has been the interim storage site for defense waste (in the form of DWPF canisters) and other nuclear waste (both domestic and foreign Spent Nuclear Fuel) for half a century. There is a need to formulate a plan to get this waste off-site.

The 1982 Nuclear Waste Policy Act (NWPA), amended in 1987 designated Yucca Mountain as the national site to be developed for America's permanent waste repository. This planning was interrupted in 2011 when the Obama administration directed the Department of Energy Secretary, Dr. Steven Chu, to withdraw its application from the Nuclear Regulatory Commission (NRC) for licensing the site for that function. This decision to no longer consider Yucca Mountain as a disposition site for nuclear waste appeared to be a political decision since no technical basis was ever presented for such an action. A recent Government Accountability Office report found that there appears to be no scientific evidence supporting claims that the Nevada site is geologically inappropriate as a national waste repository. For the past two or so years the disposition planning for the SRS canisters has become very clouded and uncertain.

Following the withdrawal action for licensing Yucca Mountain, the President established a Blue Ribbon Commission (BRC) for the purpose of identifying alternatives to Yucca Mountain that could accommodate America's current and future nuclear waste. The BRC released its final report in July of 2012 with general recommendations that must be evaluated by various relevant federal and state agencies. Recommendations emerging from those evaluations will then be subject to consideration by a number of federal and state agencies as a national waste management program is developed.

Recent court actions in August 2013 (based on court challenges by Aiken County) have directed the administration to once again consider Yucca Mountain as the national nuclear waste disposition site. A recent federal study recommended that planning for a federal repository commence immediately. All these uncoordinated and unfocused actions make it likely that a repository is still years away. However, since a federal repository is now once again viable the Board feels that planning for nuclear waste disposition should commence immediately. Further, the Board feels that the waste at SRS may be uniquely useful as a federal repository is planned and developed.

Discussion

Since a federal repository is once again a candidate to receive nuclear waste from SRS, Environmental Management in HQ should work with their counterparts in HQ Waste Management to ensure that projections for current DP nuclear waste quantities (specifically the SRS canisters) are included in the latest planning. Whatever agency or organization is charged

with implementing the federal repository program should also be made aware of the urgency of dealing with the DP waste and the state of readiness of the DP waste along with the current quantities.

Further, it seems that this revitalization of interest in a federal repository may also offer another opportunity for use of SRS canisters. In the event that it becomes necessary to have a demonstration program for disposition, perhaps it would be useful to demonstrate the disposition of nuclear waste using one or more of the SRS canisters. The canisters are “disposition ready” and may be a useful tool for such a study. In our view this aspect should at least be considered.

Recommendations

The SRS CAB recommends that:

1. DOE-Environmental Management work with and advise the organization charged with implementing a federal repository nuclear waste program relative to the latest DP quantities and the “state of readiness” of the SRS canisters.
2. DOE- Environmental Management offer for consideration use of the SRS canisters for a federal repository demonstration program in the event such a program is considered useful or necessary.

Recommendation 315

Public Meetings on Background and Status of High-Level Waste Tank Closure Program

Background

As the result of many years of nuclear materials production at the Savannah River Site, about 37 million gallons of radioactive liquid waste have been placed in 49 underground storage tanks. Twenty-four of these do not meet secondary containment standards of the Federal Facility Agreement or have leaked, so closing them has been a top priority of the Department of Energy's cleanup program. The Department and the regulatory agencies with cleanup oversight responsibilities have often stated that the High Level Waste in these tanks poses the greatest environmental risk in South Carolina.

For example, in an October 1, 2012 news release on SRS.gov about the closing of tanks 18 and 19, the following is stated:

“Successful closure of SRS Tanks 18 and 19 signifies the most substantial environmental risk reduction achievement for the State of South Carolina since 1997 when DOE closed Tanks 17 and 20, the first for SRS and the Nation.”

In an August 18, 2013, letter from Catherine Templeton, Director of the SC Department of Health and Environmental Control, to Dr. Ernest Moniz, Secretary of the US Department of Energy, the following is stated:

“The high level radioactive liquid waste stored in aging tanks at the Savannah River Site (SRS) poses the single largest environmental threat in South Carolina.”

And most recently, in a September 6, 2013, letter from South Carolina Governor, Nikki R. Haley, to Dr. Ernest Moniz, Secretary of the US Department of Energy, the following is stated:

“As you know, the single largest environmental, health, and economic risk to the State of South Carolina is 37 million gallons of high-level nuclear waste sitting in antiquated tanks on the Savannah River Site (SRS) near Aiken, South Carolina.”

This view that the waste tanks pose a significant risk was also reiterated in a 2010 report (“Actions Needed to Address Persistent Concerns with Efforts to Close Underground Radioactive Waste Tanks at DOE's Savannah River Site”) by the U.S. Government Accountability Office: “Many of these tanks have a history of leakage and 8 are sitting near or below the water table, raising concerns that radioactive and hazardous waste in the tanks could leak into the groundwater and endanger worker safety, public health, and the environment.” (page 1)

As a result of these statements, the public realizes that a very serious threat exists, but wonder how they might be personally impacted, because the actual risks go unstated. For those living near the Savannah River Site, Emergency Preparedness Plans are distributed annually, but it is not clear from the Plan how they might be impacted from a release or incident involving the underground storage tanks. For downstream citizens the major concern is the risk of contamination of the Savannah River, which is the drinking water source to the City of Savannah, GA, and neighboring communities in Beaufort and Jasper Counties in South Carolina. In fact, the annual drinking water quality report provided by drinking water suppliers indicates that some of the tritium in the drinking water comes from the Savannah River Site. While tritium levels are well below the U.S. Environmental Protection Agency's Safe Drinking Water

standard, it is clear that the operations on the Savannah River Site can impact the water quality of the Savannah River. However, it is not clear to the public whether the highly radioactive waste in the underground storage tanks put drinking water supplies at risk.

Comments

It is a great concern that budget appropriations are not adequate to complete the closure of the 20 most vulnerable tanks in a timely manner. It is important that the citizens, who have a potential to be impacted, are made aware of the risk of the delays and kept abreast of the progress of the tank closure program. Currently, most of the citizens in Savannah, GA, and in Beaufort and Jasper Counties are not aware of the operations at the Savannah River Site and the associated risks, as members of the Citizens Advisory Board can attest.

It is often said that knowledge is power. The citizens both near and downstream from the Savannah River Site need to be empowered to have a say in the future of the tank closure program. The only way this will happen is by providing them accurate, honest, frank, up-to-date information about the human health and environmental dangers, technological challenges, budget details, and successes of the tank closure program.

Recommendation:

The Savannah River Site Citizens Advisory Board recommends that the Department of Energy:

- 1) Hold public meetings to provide accurate, honest, frank, up-to-date information about the human health and environmental dangers, technological challenges, budget details, timetable, and successes of the tank closure program.
 - a. How budget constraints will impact the timetable of the tank closure program in FY 2014 and beyond must be included.
- 2) Hold the first such public meetings before the end of 2013, and annually thereafter, in the cities of Aiken, and Bluffton, SC, Augusta and Savannah, GA, and other communities deemed to be appropriate by the Department with input from the Citizens Advisory Board.
 - a. The meetings should be held in a public place, such as a public high school so that citizens have easy access.
 - b. The meetings should be held in the evening.
 - c. The meetings should be widely advertised in local newspapers and radio stations.
- 3) Invite the local drinking water suppliers to participate in the public meetings.
- 4) Invite the Environmental Protection Agency (including Environmental Justice staff), SC Department of Health and Environmental Control, and the GA Department of Natural Resources to participate in the public meetings.
- 5) Invite members of the Citizens Advisory Board to attend the meetings.
- 6) Develop a questionnaire to be distributed to those attending the public meetings so that the effectiveness can be assessed and additional concerns can be identified.
- 7) Consider expanding the public information meetings in the future to include other environmental concerns expressed by the public.
- 8) Invite members of the press to attend and report.



League of Women Voters of South Carolina

PO Box 8453, Columbia, SC, 29202, (803) 251-2726, www.lwvsc.org September 23, 2013

In regard to DOE request to Congress regarding underfunding SRS cleanup, LWVSC wrote the delegation three weeks ago. To date we have received NO response.

Although we were once sympathetic to the CAB "path forward" policy, we propose that, until a permanent repository is available, ALL current and future high-level nuclear wastes be managed safely and monitored closely at the locations where wastes are generated. THAT means at SRS and also at SC reactor sites.

We are concerned that several things are going on that indicate there will be no move to establish a permanent repository any time soon:

- Not only our delegation, but Congress appears distracted from solving nuclear waste problems.
- The industry is downsizing – fewer reactors are generating less electricity because of aging and other issues.
- The so-called "Waste Fund" is "collecting" less money because less electricity is contributing less to the Waste Fund.
- Finally, Congress has been diverting the Waste Fund for 30 years – so that the Fund is on a spreadsheet somewhere, but is actually not readily available for its intended use.

It is entirely likely that various forms of nuclear waste all around the country – here and elsewhere - will be overlooked. We can collectively lose sight of a geologic repository. With industry downsizing and without policy changes, the Waste Fund will be grossly inadequate.

The League is in the process of producing a report which we hope to publish in October that supports the safe treatment, long-term storage, and monitoring of nuclear wastes at both SRS and at South Carolina reactors.

The League is appreciative of your position that commercial spent fuel not be received at SRS. If SRS were to become a commercial spent fuel storage site, then 70 congressional districts in 39 states - and many related and powerful industries - would no longer share our concerns about high level waste and spent fuel accumulating in their communities.

Could Congress become interested? We might be absolutely alone if much of the waste is "tucked away" at SRS. Please keep that in mind, and thank you for your leadership and commitment to the long-range interests of the Valley and the State of South Carolina.

For further information: Suzrhodes@juno.com or 803-546-5800



THE LEAGUE OF WOMEN VOTERS OF SOUTH CAROLINA

PO Box 8453, Columbia, SC, 29202, (803) 251-2726, www.lwvsc.org

September 2, 2013

The Honorable Lindsey Graham
United States Senate
290 Russell Senate Office Building
Washington, DC 20510

Dear Senator Graham;

The League appreciates your on-going interest and support of SRS cleanup, and we are confident that you are aware of the following information. Please let us know if we might affect others who might act on this issue. This issue is risky and unfair, as South Carolina has worked hard to collaborate with DOE and EPA on cleanup goals, schedules, and budgets, while other states have chosen litigation rather than cooperation and dedication to results.

"The high level radioactive liquid waste stored in aging tanks at the Savannah River Site (SRS) pose the single largest environmental threat in South Carolina" according to Governor Haley in an August 28, 2013 letter to the Department of Energy (DOE). The League of Women Voters of South Carolina (the League) has been expressing concern for more than 30 years regarding these once-ignored defense-related tanks. Although the oldest tanks with the worst history for leaking have been closed, the job is far from finished. Eight of the 47 remaining tanks are partially or completely exposed to groundwater and present clear risks for leaking. For several months DHEC representatives have been asking DOE representatives at public meetings to pursue SRS cleanup schedules with a sustainable DOE budget request.

In its recent budget request, DOE proposed a \$135 million reduction to the SRS cleanup program, despite long-standing schedule and budget agreements. That is about 20% less than the agreement budget; other states' cleanup programs are proposed to receive as much as a 20% increase, despite less successful cleanup programs.

DOE intends to ask DHEC for new, relaxed cleanup schedules rather than provide necessary budget requests or pay agreed-upon penalties to South Carolina for missing established cleanup schedules. The penalties could amount to almost as much as the budget reduction. The tricky Salt Waste Processing Facility is pivotal to waste treatment, tank closure, and site management goals. The decreased budget would seriously slow this critical program.

Co-President

Jo Anne Day

LWV Columbia Area

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Community Relations VP

Barbara Zia

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Issues & Action

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Holley Ulbrich

LWV Clemson Area

Elizabeth Weems

LWV Georgetown County

Off-Board Specialists

Peggy Appler

LWV Charleston Area

Duncan A. Buell

LWV Columbia Area

Rita Paul

LWV Columbia Area

Laurel Suggs

LWV Columbia Area

Suzanne Rhodes

LWV Columbia Area

Janie Shipley

LWV Clemson Area

The League of Women Voters, a nonpartisan political organization, encourages informed and active participation in government, works to increase understanding of major public policy issues, and influences public policy through education and advocacy. Membership in the League is open to men and women of all ages.

Governor Haley reported last week that she will not "compromise the future of our state by moving the goalposts. We intend to fully enforce all milestones;" "The League appreciates the Governor's stance on this issue, which is vital to health and safety of the citizens of both South Carolina and Georgia.

Thank you for your leadership on behalf of South Carolina's citizens.

Sincerely,

JoAnne Day, Co-president

Susan B. Richards, Co-president

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