Meeting Minutes
Savannah River Site Citizens Advisory Board (CAB) – Combined Committees Meeting
Augusta, Georgia
November 18, 2013

Monday, November 18, 2013 Attendance:

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

DOE
David Moody, DOE-SR
Terry Spears, DOE-SR
Sandra Waisley, DOE-SR
Jean Ridley, DOE-SR
Rich Olsen, DOE-SR
Angelia Adams, DOE-SR
Avery Hammett, DOE-SR
Maxcine Maxted, DOE-SR
Pat McGuire, DOE-SR
Doug Hintze, DOE-SR
Gail Whitney, DOE-SR
Bill Taylor, DOE-SR
Gerri Flemming, DOE-SR

Agency Liaisons/Regulators
Gregory O'Quinn, SCDHEC
Trey Reed, SCDHEC
Kim Brinkley, SCDHEC
Van Keisler, SCDHEC
Heather Cathcart, SCDHEC
Diedre Lloyd, EPA

Stakeholders
Robert Claussen
Tom Clements
Dan Burnfield
Karen Patterson
Liz Goodson
Art Domby
Mindy Mets
Dawn Gillas
Nancy Bobbitt
Clint Wolfe
Suzy Hobbs-Baker

Contractors
Larry Ling, 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 stated copies of the CAB Fall newsletter were available before welcoming CAB Chair Donald Bridges to open the meeting.

CAB Chair Bridges welcomed everyone to Augusta, Georgia (GA). He thanked the CAB Support Team for the meeting arrangements, and opened the meeting.

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 the CAB had adopted 12 recommendations since January 2013. She provided an update of the CAB Work Plan and highlighted each committee's progress so far for the year.

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

CAB member Clint Nangle listed the S&LM Committee members and reviewed the committee's focus. He provided a recommendation status update, stating recommendation 288 was open. He announced that the next S&LM Committee meeting was scheduled for December 3, 2013, before he asked CAB Chair Bridges to introduce the Committee's draft recommendation.

Draft Recommendation Discussion

"Savannah River National Laboratory Future Planning"

CAB Chair Bridges introduced and read the draft recommendation before opening the floor for additional comments. CAB member Nina Spinelli suggested adding a timeframe to the recommendation; however, CAB member Nangle did not want the recommendation to be restricted to one date.

CAB Chair Bridges asked Dr. David Moody, Savannah River Site (SRS) Manager, if he knew of a suitable timeframe that could be incorporated into the draft recommendation. Dr. Moody stated the Savannah River National Laboratory (SRNL) already performed some of the items listed within the draft recommendation, but overall he said he felt that adding a "time driver" would not affect the draft recommendation.

CAB member Bill Calhoun asked if there were redundancies between activities being conducted at SRNL compared to other national laboratories. CAB member Calhoun also asked how SRNL was categorized as having better core competencies than university or private industry laboratories.

Dr. Moody, stated SRNL was different from other national laboratories since the laboratory was originally established as a technology center. He explained that over time SRNL became an applied laboratory, which conducted outstanding fundamental research, and was considered one of the nation's best applied laboratories. Dr. Moody stated that Secretary of Energy, Dr. Ernest Moniz, recently established a National Laboratory Policy Council, which would be a council that addressed the cooperative research efforts being conducted between national laboratories. Dr. Moody addressed the strengths of SRNL by explaining how SRNL ranked above other national laboratories for its development of several safety patents.

Ms. Karen Patterson, Governors Nuclear Advisory Council (GNAC), suggested the CAB tour SRNL in order to understand the various types of research and technology that were being developed at SRS. She commented that in the draft recommendation she did not see any connection between what the CAB was asking SRNL to do, and why the CAB was asking the lab to do it.

CAB Chair Bridges stated the purpose of the draft recommendation was to try and enhance SRNL's role at SRS beyond cleanup since the CAB felt the development of SRNL was essential to the development of SRS.

CAB member Marolyn Parson suggested adding a fifth recommendation item that addressed a public outreach initiative. CAB member Louis Walters suggested including the science departments at local public schools and universities within the fifth item of the draft recommendation. CAB member Nangle agreed with the suggestions and said he would develop the wording later that day and the CAB could discuss the fifth item before voting on the draft recommendation. CAB member Nangle thanked the S&LM Committee for their work on the draft recommendation and he welcomed Mr. Doug Hintze, Department of Energy-Savannah River (DOE-SR), to begin his presentation.

PRESENTATION: Environmental Management Appropriations, Budget, & Enterprise SRS Updates – Doug Hintze, DOE-SR

Mr. Hintze stated the purpose of his presentation was to provide an update on the lapse of appropriations, the Continuing Resolution (CR) for fiscal year (FY) 2014, Enterprise SRS, and the workforce at SRS. He provided background information on the lapse of appropriations and commented that October 1, 2013, marked the beginning of a new FY for the Department of Energy (DOE). He explained that DOE-SR was governed by the Anti-Deficiency Act, which meant DOE-SR could not spend money it did not have or spend money on activities the money was not originally supposed to be used for. Mr. Hintze then explained that there were different types of money, and both types were important because of the timeframe in which the funds ran out. He explained that when the lapse of appropriations occurred on October 1, 2013, throughout the federal government, several federal employees were immediately furloughed because those federal agencies operate with "one year money." He said most of the government used "one year money" to operate, but on September 30, whether any money was leftover or not, all the money went away on October 1; however, he said the DOE used "no year money," which meant at the end of any FY, leftover money could be carried over into the next FY. He described that DOE-SR was able to use carryover money during the lapse of appropriations by taking money that was on the books from prior years, but once the carryover money was depleted, DOE-SR would have furloughed employees like the rest of the federal government.

CAB Chair Bridges asked Mr. Hintze if DOE had “no year money” every year. Mr. Hintze said that was correct.

Mr. Hintze stated that DOE-SR anticipated the possibility of a lack of appropriations authorization for FY 2014 and began developing plans to stretch limited FY 2013 carryover funds as far as possible into FY 2014. He pointed out that even though the Anti-Deficiency Act dictated that no money could not be spent when funding ran out, there was an exception for situations of “imminent harm avoidance.” He explained that the exception allowed for employees to be paid to ensure the “safety and security of personnel and property.” He explained this meant the government would issue an “IOU” to whoever was performing the necessary work by paying for the necessary operations to guarantee safety and security of personnel and equipment. Mr. Hintze said that DOE-SR then had to determine the operations that could be categorized into “safety and security.” He stated the four different levels of operations DOE-SR developed were “normal operations,” “minimum safe,” “safe and secure,” and “imminent harm avoidance.” He said “minimum safe” meant there would be no production or processing operations, facilities, and systems would be maintained in a state of operational readiness, continued emergent, corrective, and preventive maintenance would be performed, and full staffing levels were maintained. He said “safe and secure” involved having a minimal level of facility operations.

He provided a chart titled, “Levels of Operations” and discussed how work scope, the amount of workforce needed, and funding were all factors used to consider the operational level. He said “imminent harm avoidance,” meant that actions were sustained to protect and preserve property and human life. He said DOE-SR was trying to determine what the minimum state of operations was so money could stretch out as long as possible. Mr. Hintze explained since employees had retired from SRS since the last lapse of appropriations no one really knew a good definition of the type of equipment that could be classified as the type the Anti-Deficiency Act meant. He said in order to define “safe and secure,” DOE-SR determined the type of materials in various facilities and began looking back at the safety and security based documents to make sure facilities were safe and not a threat to the environment or public. Mr. Hintze said DOE-SR planned for “safe and secure” operations to last 60 days since individuals felt the lapse of appropriations could not continue for too long because an appropriations would have to be given eventually. He provided a chart that depicted the timeline of events for the lapse of appropriations at SRS, which began on October 1, 2013, through October 21, 2013, when operations at SRS returned to normal. Mr. Hintze discussed the major impacts of the lapse of appropriations for Savannah River Remediation (SRR), Wackenhut Services Incorporated (WSI), and Savannah River Nuclear Solutions (SRNS). He said on October 3, 2013, SRR initiated the “safe and secure” posture for the Liquid Waste (LW) program and on October 4, 2013, furloughed 1,465 of its approximately 2,000 employees; however, the remaining employees worked to maintain necessary operations. Mr. Hintze explained the furlough suspended grouting activities for tanks five and six, closure work for tanks 12 and 16, and production of DWPF canisters and salt processing through the Actinide Removal Process (ARP)/Modular Caustic Side Solvent Extraction Unit (MCU) decreased.

CAB Chair Bridges asked why there was such a difference between the severity of impacts for different contractors. Mr. Hintze explained during in April 2013, 2,500 SRNS employees were furloughed and DOE-SR had to reprogram funds into the SRNS accounts; however, since DOE-SR did not receive the reprogrammed funds until June 2013, at the end of FY 2013, there were more carryover funds for SRNS than SRR. He also explained that during August 2013, SRR laid off approximately 400 employees in order to meet the President’s budget request for FY 2014, which meant SRR almost had no carryover for FY 2014. He stated SRR was mainly involved but SRNS was also taking action to reduce work scope, in order to develop the “safe and secure” position. He said on October 11, 2013, WSI furloughed 270 employees and on October 13, 2013, implemented the “safe and secure” posture. He explained that due to the furloughs, WSI had to defer security performance testing and reduce hours for various site access points. He explained that SRNS did not have any furloughs, but dissolution of used nuclear fuel (UNF) to H-Canyon was deferred, receipt of UNF was delayed, and shipments of off-site mixed radioactive low-level waste were delayed. Mr. Hintze stated on October 17, 2013, the short term CR was announced, which would last until January 15, 2014, and on October 21, 2013 operations at SRS returned to normal; however, DOE-SR made sure operations started back in a controlled manner to make sure things were done in an organized manner.

CAB member Kathe Golden asked how SRR managed to remain “safe and secure” and perform corrective maintenance after 1,465 employees were furloughed. Mr. Hintze said DOE-SR said maintenance operators were on call in order to address potential maintenance issues, but he said there were no employees waiting around for something to occur.

Mr. Art Domby, public, asked how much money the lapse of appropriations cost and how were SRS missions impacted. Mr. Hintze said furloughed employees were not paid and would not receive back-pay; however, Mr. Hintze explained that DOE-SR was in the process of determining what activities could be performed for the rest of FY 2014, which he said would have a “waterfall effect” into the Integrated Lifecycle Cost Estimate (ILCE).

Mr. Tom Clements, Friends of the Earth, asked if the carryover funds DOE-SR used were replenished or was the money then considered to be spent. Mr. Hintze replied that DOE-SR would not receive additional funds to replenish the carryover funds that were used to continue operations.

CAB member Calhoun asked how much carryover funds DOE-SR currently had. Mr. Hintze said the carryover amount changed annually, but he said during the 1990's and 2000's, DOE-SR would have approximately three to four hundred million dollars a year; however, DOE-SR only had approximately 20 to 30 million dollars.

Mr. Hintze then discussed the CR for FY 2014 by reviewing SRS's budget.

CAB member Spinelli asked why the amount of funding DOE-SR requested from Congress for PBS 14C "Radioactive Liquid Tank Waste" was less than what was requested in FY 2013. Mr. Hintze explained that was a programmatic decision based upon all the scope that was going to be covered during FY 2013 and 2014. He said DOE-SR had discussions with DOE Headquarters (DOE-HQ), and the Office of Management and Budget (OMB), but the amount for PBS 14C was the amount the President wanted to request.

CAB Chair Bridges asked Mr. Hintze if Congress developed a budget for FY 2014, would that improve the conditions significantly at SRS. Mr. Hintze answered that the budget at SRS was going to be lean anyway because sequestration was still in effect, and that DOE-SR did not expect to see increases in the amount of funding.

Ms. Karen Patterson, GNAC, asked if the amount of funding from the congressional request included the sequestration considerations. Mr. Hintze said when DOE-SR was told that sequestration was included.

Mr. Hintze then discussed Enterprise SRS, which he said was the strategic vision for the future of SRS that was created in December of 2010. He provided a transformation chart that showed if SRS did not seek new missions, the EM cleanup missions would be completed, and the only thing left at SRS would be National Nuclear Security Administration (NNSA) missions. Mr. Hintze stated that current Environmental Management (EM) and NNSA missions were critical components of Enterprise SRS. He stated the strategy for Enterprise SRS was to successfully execute current EM and NNSA missions by leveraging the unique nuclear materials expertise to benefit the nation while identifying new opportunities within global business segments of Environmental Stewardship, National Security, and Clean Energy. He explained that Enterprise SRS developed new opportunities and missions that focused on the capabilities and assets that were available. He explained Enterprise SRS was a transformational strategy for an enduring sustainable future for SRS that was introduced as the strategic vision for SRS in the 2011 SRS Strategic Plan, and listed each of the 12 strategic initiatives. He said based on lessons learned from two years of Enterprise SRS, DOE-SR decided to categorize initiatives into logical focus areas. He said the four focus areas were "Surplus Nuclear Materials Management," "Environmental Risk Reduction," "Next Generation Tritium Supply," and "Global Monitoring and Securing of Nuclear Materials." He said DOE-SR also prioritized initiatives based on sponsorship and funding, resources available, return on investment, and probability of success. He provided a chart that depicted how the four focus areas of the 12 initiatives were divided into "priority 1" and "priority 2" categories. He explained the chart showed DOE-SR was spending its time and money on the priority 1 issues, and if funding was available, would attempt to focus on "priority 2" issues. He provided a work breakdown structure of the EM cleanup and NNSA activities before he showed a chart titled, "Alignment of Current Missions." He said Enterprise SRS enabled legacy nuclear materials to be transformed into valuable assets and stable waste forms, developed innovative approaches for national nuclear material challenges, secured materials to prevent unwanted global proliferation, sustained the nation's only tritium supply for our nuclear weapons deterrent, and provided economic impacts to the region while reducing environmental risks. He discussed the workforce at SRS, which as of September 2013, consisted of approximately 10,393 employees. Mr. Hintze stated the amount of current employees was approximately 1,000 less than during July due to the MOX facility reducing employees and SRR undergoing workforce restructuring in August 2013.

CAB member Calhoun asked if SRS had a leader whose main job was to implement the strategy of Enterprise SRS. Mr. Hintze said DOE-SR had a complete organization setup to ensure the strategy of Enterprise SRS. He explained throughout SRS, there was a mission support group that drew on all the business functions and removed things that may prevent success for Enterprise SRS.

CAB member Ed Burke asked if DOE-SR had any private funding opportunities lined up. Dr. Moody said there was a grant and commercial partner working with the study of hydrocarbon methane for transportation purposes. Dr. Moody said a joint initiative between SRS and Aiken County established new laboratories at the Applied Research Center

(ARC). Dr. Moody explained that the new laboratories enabled research to be conducted to determine new materials that advance fuel cell research. Dr. Moody also mentioned some joint work and cost sharing activities with Toyota were underway. Dr. Moody said, "The numbers show that about 60 percent of the SRNL annual budget comes from offsite sources."

Mr. Patrick McGuire, DOE-SR, commented that in addition to the energy-related private funding Dr. Moody pointed out, funding from outside the United States was being invested in SRS from the Canada Atomic Energy Limited of Canada. Mr. McGuire said bringing foreign materials to SRS, for nonproliferation purposes, from reactors in Canada was an investment of approximately 22 million dollars for SRS over a four–year period. Mr. McGuire mentioned that Canada was also investing approximately 60 million to ship "residues" from their processing reactors. Mr. McGuire said the "new money" being invested in SRS would go into the tax base of South Carolina (SC) and provide national and international benefits.

CAB member Parson asked Mr. Hintze if the two new initiatives labeled "Revitalization of Site Assets" and "Alternative Energy Projects," on the chart titled "Alignment of Current Missions," were considered equally important as current missions. Mr. Hintze explained the purpose of the chart was to show that Enterprise SRS was directly integrated with current SRS missions. CAB member Parson asked what role DOE Headquarters (HQ) had on the operational priorities. Dr. Moody said HQ continually funded much of the ongoing work and routinely contributed to prioritization efforts; however, he explained that DOE-SR did not have to ask HQ to specifically approve the priorities because receiving the President's budget was approval for planned activities at SRS. CAB member Parson asked how the transformation of the slope for current and new SRS missions had changed. Dr. Moody said the graph in Mr. Hintze's presentation was correct; however, it assumed DOE-SR would receive a substantial investment of approximately one billion dollars up front to bring in five or six billion dollars of work from the out-years.

CAB Chair Bridges asked Mr. McGuire if the program was clearly defined. Mr. McGuire replied that conceptually the program was defined, and DOE-SR wanted to help Canada to safely receive and disposition material. Mr. McGuire said DOE-SR was still working with Canada and their vendors to define how the materials would be handled, shipped, and eventually unloaded in H-Canyon. He said DOE-SR knew conceptually what the objectives were, but DOE-SR was still figuring out specific information. CAB Chair Bridges asked if any other countries wanted SRS to handle their material. Mr. McGuire said DOE-SR was always trying to build upon Enterprise SRS by building and leveraging the successes at SRS to solve national and international challenges. Mr. McGuire stated as other countries face challenges, DOE-SR always tried to help.

CAB Chair Bridges asked Dr. Moody if he thought small modular reactors would occur at SRS. Dr. Moody said part of the vision of Enterprise SRS was to bring the complete tritium mission to SRS and the Tennessee Valley Authority (TVA) was currently eradiating targets to produce tritium. He said NNSA was interested in consolidating the tritium mission at SRS, which meant DOE-SR was looking for advanced ways to get materials into those reactors so SRS could generate tritium. Dr. Moody said he believed SRS would "get there," but with tight budgets he did not know when. He said another move afoot was to look at advanced reactors. He said many local community organizations feel SRS should be a location for smaller advanced reactors, since there was considerable expertise and interest available. He said several interested parties had approached SRS to begin a partnership to develop new fuel types. Dr. Moody said, "Will we win the next contest? I don't know the answer to that question; however, DOE-SR is still very interested in the whole of the SMR's."

Nuclear Materials (NM) Committee Overview – Bill Calhoun, CAB

CAB member Bill Calhoun listed the NM Committee members and reviewed the committee's purpose. He provided a recommendation status update, stating recommendations 307, 309, and 314 were open while recommendation 313 was pending. He discussed the DOE response for the three open recommendations before announcing that the next NM Committee meeting was scheduled for December 10, 2013 at the DOE Meeting Center.

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

CAB member Spinelli reminded everyone that CAB Chair and Vice Chair elections were scheduled for the next day, and asked for anyone interested in chairing a committee to inform the CAB Support Team since Committee Chair elections would be held at the January Full Board Meeting. She encouraged everyone to visit the CAB Facebook page and the website at cab.srs.gov. She reminded everyone copies of the Fall Board Beat newsletter were available and

asked CAB members to contact the CAB Support Team if they had future newsletter ideas. CAB member Spinelli introduced Ms. Suzy Hobbs-Baker to begin her presentation.

PRESENTATION: Community Presentation- Suzy Hobbs-Baker, Nuclear Literacy Program

Ms. Hobbs-Baker said the purpose of her presentation was to discuss the Nuclear Literacy Program. She explained that her family was involved with nuclear energy and technologies, and when she was 15 years old, she visited her first nuclear site to collect research on the dangers of radiation for a school project. She explained during the visit, her father, a nuclear physicist, encouraged her to explore the nuclear industry so she could develop an unbiased understanding of nuclear issues. She stated after high school she attended an art school where she became extremely concerned with environmental issues. She explained that during her first job after college, she became aware of the different ways energy use could negatively impact public health. She stated she knew nuclear energy was the safest energy used on a large scale, but unfortunately fear made it hard to implement. Ms. Hobbs-Baker commented that while the future of environmental and health issues were unknown, she said she felt a regular dialogue about the future of nuclear energy should occur. She stated she began creating positive artwork that attempted to engage individuals into communicating about nuclear energy; however, once Fukushima occurred she felt her artwork was no longer the appropriate method to discuss nuclear energy, so she contacted advisors and friends and began developing the Nuclear Literacy Project. She discussed how the Nuclear Literacy Project was extremely focused around social media and intended to provide members of the public information through methods that were already in use and easily accessible. Ms. Hobbs-Baker said she became a "nuclear tourist," and during her visit to Europe she was able to provide virtual access to several nuclear facilities through the use of online blogging. She provided several images of herself at several facilities such as AREVA's La Hague Nuclear Facility in France, the International Atomic Energy Agency (IAEA), and Poland's Marie Curie Research Reactor. Ms. Baker-Hobbs explained that during her European nuclear tour, she was based in Germany, which was currently shutting down the country's nuclear program; however, she explained that Germany decided to refocus its energy efforts on studying fusion research and waste management. She also mentioned while she was in Europe, she was notified of the CAB's decision to issue a position statement against the potential use of SRS as an interim waste storage facility. Because of that, Ms. Baker-Hobbs said she decided to include several pictures in her presentation of the Central Organization for Radioactive Waste (COVRA), an interim nuclear waste storage facility located in the Netherlands. She explained the COVRA was accessible to the public and contained beautiful art galleries. She said the national museum was running out of storage and display space and when the COVRA was constructed, museum officials worked with the COVRA to integrate artwork throughout the interim nuclear waste storage facility. She provided an image of the exterior of the COVRA, which was painted a bright orange; however, she explained that over the course of the next one hundred years, every ten years the COVRA's exterior would be painted a lighter shade of orange to represent the natural decay process of the radioactive material inside. She said the COVRA offered an effective type of engagement that was necessary for individuals to accept the storage of nuclear waste instead of treating the waste like it was no one's responsibility. She commented that having an interim nuclear waste storage facility, that incorporated ideas such as the COVRA, could provide potential opportunities for the community. She said she understood there were concerns about nuclear technology; however, she stated since there were leaders in nuclear technology located in the local region, she felt it was "immature" to ignore issues about handling nuclear waste.

CAB Chair Bridges asked Ms. Hobbs-Baker if she saw countries in Europe that effectively interacted with the public about nuclear energy. Ms. Baker-Hobbs said, "yes" and explained that France annually held public debates, where citizens were encouraged to share their opinions about nuclear energy. She stated several individuals in France are against nuclear energy; however, she said she felt input was successful in France because an active dialogue was encouraged and promoted by the government and nuclear industry.

CAB member Christopher Timmers asked what percentage of France's electrical power came from nuclear energy. He also asked what energy source would replace Germany's use of nuclear power. Ms. Baker-Hobbs replied that approximately 70 to 80 percent of France's electrical power came from nuclear energy and Germany was constructing ten new coal plants to replace nuclear energy use.

CAB member Walters asked Ms. Baker-Hobbs if she had an opportunity to address students in SC regarding her organization. He also asked her opinion about the disaster in Fukushima, Japan. Ms. Baker-Hobbs replied that with the help of SRS Community Reuse Organization (CRO), and Citizens for Nuclear Technology Awareness (CNTA), her organization spoke to approximately 500 students during National Nuclear Science Week. She also stated the Nuclear Literacy Program was one of three non-profit organizations that received a grant from the "Community Involvement Fund," which would enable the Nuclear Literacy Program to work with local school systems and reach out to other organizations. Ms. Baker-Hobbs said the situation in Fukushima was devastating and would be an extremely

challenging cleanup; however, she said the thing she felt was most important was that there had not been a loss of life or radiological health impact on the Japanese population.

Ms. Karen Patterson, GNAC, asked how people who understood nuclear energy could help individuals who do not. Ms. Baker-Hobbs replied that an effective way would be to reinforce communication with the public by allowing nonprofit organizations to provide programs that establish a basic understanding of nuclear issues.

Ms. Clara Delbert, public, thanked Ms. Baker-Hobbs for her presentation, but said she felt the presentation was too "industry-focused." Ms. Delbert asked Ms. Baker-Hobbs how the Nuclear Literacy Program could expand to further engage local citizens. Ms. Baker-Hobbs said she planned to focus her attention on engaging young adults, women, and minorities since past data showed those groups had not been adequately pursued or involved in discussions about nuclear issues. Ms. Delbert asked Ms. Baker-Hobbs if she noticed the development of international standards for nuclear energy and waste while in Europe. Ms. Baker-Hobbs replied she did when she visited the IAEA.

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 and recommendation 315 was pending. She discussed the DOE response for recommendations 293 and 294; however, she said DOE had not responded to recommendation 315. She announced that the next FD&SR Committee meeting was scheduled for December 3, 2013, and reviewed presentations scheduled for that meeting. CAB member Parson said since December 2012, the CAB had received three presentations, with information from DOE-SR, SCDHEC, and EPA, specifically about environmental monitoring in GA. She encouraged everyone to attend the upcoming meeting since there would be a discussion to determine whether the CAB should take further action about monitoring in GA, or if the CAB was satisfied with the monitoring efforts given what was learned from past presentations. She said representatives from DOE-SR, SCDHEC, and EPA would be available to address concerns regarding monitoring in GA. CAB member Parson asked FD&SR Committee members to read chapter five of the 2012 SRS Environmental Report titled, "Environmental Surveillance," before the December 3 meeting. She listed presentations that were scheduled for the next day; however, she stated Mr. Rob Pope's, EPA, presentation would be rescheduled. She stated she was a candidate running for CAB Chair and said she hoped everyone would support her nomination.

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

CAB member Ed Burke listed the WM Committee members and reviewed the committee's purpose. He provided a recommendation status update, stating recommendation 304 was open and recommendations 310, 311, and 312 were pending. He reviewed each recommendation and the DOE response for recommendation 304. CAB member Burke announced the next WM Committee meeting was scheduled for December 10, 2013, and reviewed presentations scheduled for that meeting. He then welcomed Mr. Carl Lanigan, DOE-SR, to begin his presentation.

PRESENTATION: Saltstone Disposal Units – Carl Lanigan, DOE-SR

Mr. Lanigan stated the purpose of his presentation was to fulfill a 2013 WM Committee Work Plan topic by providing a status update and overall description of the Saltstone Disposal Units (SDUs) at SRS. He provided a systematic diagram, which illustrated all the processes and facilities within the Liquid Waste (LW) system. He explained the SDU project involved removing salt waste from High-Level Waste tanks, processing the salt waste through the Actinide Removal Process (ARP)/Modular Caustic Side Solvent Extraction Unit (MCU), which were facilities that separated the highly radioactive portion of the salt waste to be sent to the Defense Waste Processing Facility (DWPF) for vitrification into glass for final disposal. Mr. Lanigan stated that a majority of the liquid decontaminated salt waste was then sent to the Saltstone Production Facility (SPF) to be mixed with a cement-mixture, becoming saltstone, for final disposition at SRS. He said 99 percent of treated tank farm waste would be in the form of low-level salt waste, and he explained that the disposition of low-level waste was fundamental to emptying the High-Level Waste tanks at SRS. He stated the mission of the SDU project was to construct SDUs on time, and with sufficient capacity, to continue uninterrupted treatment and disposal of low-level salt waste. Mr. Lanigan provided information about how the construction of SDUs evolved since vaults one and four were constructed during the 1980's. He said both vaults were rectangular reinforced concrete structures, which were no longer in operation. He explained that DOE conducted various studies in the year 2000 to enhance safety and evaluate strategies that could reduce the cost and complexity of waste disposal operations. He stated the studies concluded that circular tank structures were a better alternative for the safe disposition of saltstone.

He mentioned during the year 2008, DOE-SR began using circular SDU cells, which were reinforced concrete cells, measuring 150 feet in diameter, 22 feet high, and held a capacity of 2.9 million gallons. He said each circular SDU cell was watertight and came equipped with a geo-synthetic clay liner to absorb moisture, exterior high density polyethylene (HDPE) liner, and grout level markers; however, every fifth SDU cell, was equipped with a leak detection system. Mr. Lanigan stated that in the year 2011, DOE conducted another evaluative study to address the Department's goal of maintaining process approval by providing the public with the safest and most cost effective SDU. He stated the results of the evaluation estimated a projected lifecycle savings of approximately 300 million dollars, since it was more cost effective for DOE to construct seven "Mega" disposal cells instead of the old concept of constructing 72 small SDUs. He provided pictures of the first "Mega cell," known as "SDU six." He said SDU six was in the early construction phases at SRS, but the SDU would be 375 feet in diameter, 43 feet high, and hold a capacity of 30 million gallons. He described the infrastructure called the "Balance of Plant," which consisted of a grout line, passive ventilation, drain water return system, thermocouple trees, power, and three remote cameras to ensure all SDUs were connected to the SDF. He stated there were no plans for vaults one and four, while SDU two was almost full, and SDUs three and five were ready for operation. Mr. Lanigan explained that once all the liquid waste was treated and saltstone operations were completed, all disposal cells would be covered with a "final closure cap" to prevent water intrusion; however, he explained that groundwater monitoring wells were established to detect potential contamination in the future.

Public Comments

There were no public comments.

~Meeting Adjourned

Meeting Minutes
Savannah River Site Citizens Advisory Board – Full Board Meeting
Augusta, Georgia
November 19, 2013

Tuesday, November 19, 2013 Attendance:

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DOE
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Pat McGuire, DOE-SR
Rich Olsen, DOE-SR
Armanda Watson, DOE-SR
Bill Taylor, DOE-SR
Gerri Flemming, DOE-SR
John Bellavich, DOE-OIG
Cyndi Spencer, DOE-OIG

Agency Liaisons/ Regulators
Van Keisler, SCDHEC
Heather Cathcart, SCDHEC
Kim Brinkley, SCDHEC
Diedre Lloyd, EPA

Stakeholders
Dan Burnfield
Tom Clements
Dawn Gillas
Laura Walker
Nancy Bobbitt

Contractors
Amy Meyer, SRNS
Susie Ferrara, SRNS
Kristin Huber, SRNS
Steve Wilkerson, SRR
Ashley Whitaker, NOVA
James Tanner, NOVA
Jesslyn Anderson, NOVA

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 before reminding everyone of agenda changes. She then invited CAB Chair Bridges to begin his update.

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

CAB Chair Bridges called for discussion of the September 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 Augusta, GA, which was the final Full Board meeting of the year. He thanked both the CAB Support Team for the meeting arrangements and DOE-SR for allowing the CAB to continue meeting despite the tough budget situations. He discussed CAB membership by stating the CAB had all 25 members, but since one CAB member resigned and three CAB members reached their six-year term limit, there would be four vacancies at the beginning of 2014. He explained no CAB meetings were held since the September Full Board meeting due to the shut-down; however, December committee meetings would take place as scheduled. He said the Environmental Management Site Specific Advisory Boards (EMSSAB) Chairs Meeting was held on November 5-7, 2013, in Portsmouth, Ohio and he briefly shared his observations. CAB Chair Bridges commented that each site discussed its cleanup accomplishments; however, he said individuals were impressed with Savannah River Site's (SRS) ability to perform significant successful cleanup accomplishments such as production of DWPF canisters, High-Level Waste tank closure activities, and TRU waste removal. He said Ms. Alice Williams, Deputy Assistant Secretary for Environmental Management (EM), explained that EM was not closing down soon due to cleanup schedules indicating 70 years of cleanup, the construction and continued operations of new major nuclear facilities, and Japan's strong

interest in EM's waste treatment technology for Fukushima cleanup. CAB Chair Bridges shared various pieces of information about the Portsmouth Gaseous Diffusion Plant before discussing three recommendations from the SSAB Chairs Meeting.

Chairs Meeting Recommendation Discussion

"Funding for cleanup U.S. Department of Energy (DOE) sites should be maintained as a top priority"

CAB Chair Bridges briefly discussed the purpose of the proposed recommendation; however, there were no additional comments.

"Decision on standards and actions on release of recycle scrap metal"

CAB Chair Bridges read the recommendation and opened the floor for comments. CAB member Ed Burke asked if this recommendation was economically justified for low-value materials. CAB Chair Bridges said he thought so.

CAB member Marolyn Parson asked if the recommendation could apply to other valuable metals that would be released and recycled. CAB Chair Bridges said his opinion was that this was not something that would impact SRS at all.

Dr. David Moody, SRS Manager, said SRS did not have the high value metallic scrap like Paducah; however, he said SRS had other valuable parts. Dr. Moody explained that the SRS Community Reuse Organization (CRO) wanted old heat exchangers for reuse purposes. Dr. Moody said that SRS had several opportunities for reuse, and scrap was not the only material that had value.

"Making Disposition Paths available on-line"

CAB Chair Bridges stated this recommendation suggested that DOE recreate the "disposition maps" then make them available online. There was no further discussion.

CAB Chair Bridges discussed public outreach initiatives and stated he provided a presentation the day before to the Aiken City Environmental and Energy Advisory Committee. He discussed aspects of National Nuclear Science Week, which was held on October 21-25, 2013. CAB Chair Bridges listed various challenges for the remainder of 2013. He then discussed the EMSSAB focus areas, which included budget priorities, identifying community expectations with reduced funding, and broadening community participation in EMSSAB membership and meetings. CAB Chair Bridges encouraged the CAB to continue focusing on public involvement and developing recommendations to DOE.

Chairs Meeting Recommendation Voting

"Funding for cleanup U.S. Department of Energy (DOE) sites should be maintained as a top priority"

CAB Chair Bridges called for a motion of this recommendation since there was no additional discussion. The CAB approved the recommendation with 21 votes of approval and no oppositions or abstentions.

"Decision on standards and actions on release of recycle scrap metal"

CAB Chair Bridges reviewed the recommendation before calling for a motion. The CAB approved this recommendation with 21 votes of approval, no oppositions, and no abstentions.

"Making Disposition Paths available on-line"

CAB Chair Bridges called for a motion to accept this recommendation. The CAB approved this recommendation with 18 votes of approval, no oppositions, and two abstentions.

Agency Updates

Dr. David Moody, SRS Manager – Department of Energy – Savannah River (DOE-SR)

Dr. Moody began his update by saying SRS was approaching normal operations, but impacts of the lapse of appropriations would most likely extend to January 2014. He said when DOE-SR received a CR, the funds were in the wrong "bucket," which last Spring resulted in reprograming funds; however, it was May before the Department of Energy-Savannah River (DOE-SR) received funding in the right "bucket." He commented that the year 2013 was an extremely productive year that contributed to the message that DOE-SR continued to deliver results. Dr. Moody commented that DOE-SR did not willingly accept the reduced budgets; however, when "the dust settled," SRS delivered. He said during the first year of operations, the Biomass Fuel plant operated well, which resulted in the generation of 1.6 billion pounds of steam, 97,000 megawatts of electricity, 10,000 tons of tires processed, and 221,000 tons of clean biomass from the forest industries. He said 95 percent of SRS's legacy transuranic (TRU) waste was currently at the Waste Isolation Pilot Plant (WIPP) in New Mexico. He said all the TRU waste was remediated, repackaged, and categorized, and four weekly TRU Pack 3 containers were being shipped to the WIPP. Dr. Moody said High-Level Waste tanks five and six were currently being grouted with expectations to be completed in December. Dr. Moody stated the risk was further reduced at SRS with the emptying of two additional tanks, and added that 13 more tanks were in the process of being cleaned up. He said SRS ended FY 2013 with 225 canisters, which was over 3,700 canisters completed. He stated the pilot plant for the salt processing was shutdown in order to reconfigure the facility for the Next Generation Solvent (NGS). He said DOE-SR successfully negotiated the construction completion of the Salt Waste Processing Facility (SWPF). He stated he hoped the facility would be completed before December 31, 2016; however, he said the challenge was to determine how to configure the rest of the Liquid Waste (LW) system so enough space would be available for the SWPF to operate at its full capacity. He said DOE-SR looked forward to emptying Glass Waste Storage Buildings (GWSB) one and two instead of constructing a third GWSB. He said GWSB one and two could be reused, but DOE was searching for opportunities to use those materials. He said FY 2013, in spite of the budget uncertainties, was an extremely productive year at SRS. Dr. Moody said he did not know what the FY 2014 budget would be, but he looked forward to seeing how SRS continued to deliver results.

CAB member Hayes asked Dr. Moody when the NM Committee could have the presentation on the impacts of the lapse of appropriations to the NM programs at SRS. She also asked Dr. Moody if he was referring to dry cask systems when he mentioned reusing GWSB one and two.

Dr. Moody stated the presentation Mr. Doug Hintze, DOE-SR, provided the day before, explained information on the mechanics of how the lapse of appropriations was handled. He explained that operations at SRS shifted to a "safe and secure" posture; however, everything was correctly configured, tracked, monitored, and the necessary maintenance was performed. Dr. Moody addressed the NM Program by stating that there was never a reduction in staff regarding NM program, but operations were moved out to be completed later in the year. He stated remediation activities for building 235-F slowed down; however, DOE-SR continued to look forward to retrieving the materials in that facility. He said time was lost, but DOE would not miss any commitments. He explained that all the information had been provided to the CAB; however, he told CAB member Hayes that he did not know when DOE-SR would provide her with new information since the FY 2014 budget was still unknown. Dr. Moody said the reuse of GWSB one and two was not the same as dry cask storage. He explained that the canisters in GWSB one were fairly low radioactivity and DOE was looking at a specifically designed set of storage casks on a pad where these canisters could be positioned in a potentially shippable configuration. CAB member Hayes asked if workers or remote handling would be necessary to perform the potential GWSB configuration. Dr. Moody said DOE's choice would be to use shielded operations. CAB member Hayes asked if the contents of canisters in GWSB one were low enough that they were safe to members of the public. Dr. Moody stated when an individual walks into GWSB one, there is zero dose because of the shielding. He explained that once a canister was in a concrete cask on a pad, there would be a minimum dose to the worker as they inspect, which meant there was zero dose to the public.

CAB Chair Bridges asked Dr. Moody what was driving the efforts to reuse GWSB one and two, instead of constructing a third GWSB. Dr. Moody said the economic analysis, would mean that GWSB three would cost approximately 140 million dollars and the estimates for pad storage would cost approximately 60 to 70 million dollars. He said he hoped the canisters would be in a shippable configuration as soon as possible so DOE-SR could begin looking for funding, and a lighter shipping cask, as well as encourage the movement of the materials offsite. CAB Chair Bridges asked what activities DOE-SR had to delay due to the 2013 budget. Dr. Moody said if processing of the UNF could have continued, DOE-SR would have been able to begin processing potentially vulnerable fuel in L-Basin, followed by the blending down of highly enriched uranium (HEU) and providing it to the Tennessee Valley Authority (TVA). He stated the budget

caused SRS to miss a beat for kicking off the de- inventory of L-Basin.

Ms. Diedre Lloyd, Environmental Protection Agency (EPA)

Ms. Lloyd, EPA, briefly introduced herself and said on October 1, 2013, EPA was shut down due to the lapse of appropriations. She said since returning to work, EPA continued to operate on a reduced budget with a short-term CR as well as the possibility of additional sequestration in FY 2014. She said the most likely evident change to the SRS team would be the loss of travel funding, which would result in the loss of directly overseeing work at SRS and attend public meetings. She said DOE would be submitting Appendix E two weeks late, due to the furlough by the Office of Management and Budget (OMB). She said EPA continued to be concerned with the budget reduction as it applied to the LW Program at SRS and the possible impacts to milestones. She said tanks five and six were slowed by the furlough, but continue to move forward. She said other work on the remaining tanks would be slowed. She said EPA planned to remain committed to SCDHEC and DOE to address the issue. While the Five-year presentation will be provided later, DOE, SCDHEC, and EPA were actually signing the Five-year itself. The final document should be available to the public in the upcoming months. She said additional decision documents for D-Area and the Dunbarton Bay subunit of Steelcreek will be finalized this year and the CAB and the public will have an opportunity to comment on the proposed actions. She said while EPA may attend fewer meetings in person during FY 2014, the agency planned to continue monitoring and overseeing activities at SRS and welcome any and all public input.

Mr. Van Keisler, South Carolina Department of Health & Environmental Control (SCDHEC)

Mr. Keisler, SCDHEC, said since Ms. Shelly Wilson, SCDHEC, was unable to attend the meeting, she provided him with a statement that said, “SCDHEC still expects DOE to fight for the funding that is needed to reduce risk and meet the High-Level Waste commitments. Although DOE is on track today, their decisions now will affect their ability to meet milestones for 2015 to 2028. Two of the main factors affecting their future timely risk reductions are additional treatment capacity to make up for the SWPF delays and funding. It is disappointing to the Department to see DOE prepare to slow down treatment in the wake of our previous success. An example is the 100 planned DWPF canisters for 2014 rather than the usual 275 canisters. It is imperative that DOE fight for the funding needed in 2014, 2015, and beyond and for expanded treatment in order to maintain successful risk reduction activities.”

Mr. Keisler said Appendix E was slightly delayed and DOE requested SCDHEC consider an 18 day delay in the actual submittal of Appendix E, which EPA and SCDHEC both approved. He explained that the delay would apply to SCDHEC dates to provide comments on Appendix E. He explained that under normal conditions Appendix E would be submitted on November 15, but the new date was December 3, 2013. He stated the delay was only for the Appendix E document, and the extension request would not apply to any milestones within Appendix E. He said since October, there were face to face meetings with DOE and EPA present, about the A-Area waste units and interim action proposal meeting. He thanked the regional staff for overseeing the grouting of tanks five and six. He said SCDHEC had reviewed 15 documents in the last two months.

Public Comments

Mr. Tom Clements, Friends of the Earth (FOE), thanked the CAB for focusing on the need to receive adequate funding for the cleanup of High-Level Waste at SRS. He said there was discussion about bringing liquid High-Level Waste from the Chalk River National Laboratory in Canada to H-Canyon for processing. He said there were at least two other foreign shipments possibly coming to SRS or United States. Mr. Clements said the first shipment was fuel containing HEU from the Republic of Georgia. He said the second shipment he was aware of was a shipment of approximately 290,000 pebbles known as “eradiated graphite balls” from Germany. Mr. Clements suggested the CAB request a presentation on the possible foreign materials that may come to SRS, or the United States, that were outside the scope of the usual German and Canadian materials. A copy of the referenced documents are attached to this document.

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

CAB member Burke listed the WM Committee members and reviewed the committee's purpose before he introduced Mr. Steve Wilkerson, Savannah River Remediation (SRR) to begin his presentation.

PRESENTATION: Saltstone Facility Update – Steve Wilkerson, SRR

Mr. Wilkerson stated the purpose of his presentation was to provide information on two recent items of interest associated with the Z-Area Saltstone Facility and to communicate the actions that SRS was taking to proactively address the issues. He said the first issue was a storm water issue, which identified low-level radioactive contamination at Storm Water Outfall Z-01. Mr. Wilkerson said the second issue dealt with groundwater, which had been identified as elevated sample results at the ZBG-2 groundwater monitoring well. He provided pictures to explain the Z-Area Storm Water Flow process and pointed out specific locations such as Retention Basin No. 4, Vault 4, Storm Water Outfall Z-01, and McQueen's Branch. He said the storm water issue occurred from vaults one and four Saltstone Disposal Units (SDUs) carrying contamination from vaults one and four to the storm water drain line, which flowed to Retention Basin No. 4. Mr. Wilkerson explained that Retention Basin No. 4 only discharged if the level of water reached the predetermined spillway height, and in February 2013, due to record amounts of rainfall, Retention Basin No. 4 discharged for the first time. He stated that spillaway from Retention Basin No. 4 flowed to Storm Water Outfall Z-01, which was the location where low-level contamination was deposited in the earthen conveyance ditch beyond Storm Water Outfall Z-01. He explained that Storm Water Outfall Z-01 flowed to McQueen's Branch; however, Mr. Wilkerson said no regulatory or DOE Order driven compliance limits were exceeded, but sedimentation breaks were installed in order to minimize the spread of contamination. He listed actions that were implemented to proactively manage the situation. He said one of the things that were immediately initiated was the "front or north six cells" of vault four. He explained that workers had already been working to install a ceiling on the rest of the "south six cells," but now workers will install clean capping over the grout and then install an "elastomeric" coating on top, which should eliminate rain water "in-leakage" into the vault. He said lessons learned were incorporated into the designs for the new SDUs, which were different than the designs of vaults one and four. He explained a project was underway to increase storm water basin capacity, which was designed to hold seven inches of rain per day; however the updated capacity would be able to withstand eight inches per day. Mr. Wilkerson said additional corrective measures were established to control the spread of contamination and remove contaminated soil from the Z-01 outfall; however, he stated no radioactive contamination increases in radioactive effluent monitoring at Z-01 Outfall, and McQueen's Branch had been detected as monitoring continued. He provided images of contamination control measures before discussing the elevated sample results that were collected at the groundwater monitoring well ZBG-2. He said neither issue resulted in exceeding any regulatory or DOE Order driven compliance limits.

CAB member Kathe Golden asked when vaults one and four were constructed. Mr. Wilkerson said in the late 1980's and early 1990's.

CAB Chair Bridges asked if the sediment levels in the basin were measured and if a control point was used to measure the level. Mr. Wilkerson replied that the material coming out of the Sedimentation Basin No. 4 was most important, but once the basin was redesigned there would be comparable monitoring level. CAB Chair Bridges asked how long the roof on top of Vault four would last. Mr. Wilkerson said the roof would last for approximately 10 years.

CAB member Hayes asked what low-level meant as to what materials were leaking out of Vault 4. Mr. Wilkerson said the primary constituent was cesium.

CAB member Nangle asked what the probability of the water in the Sedimentation Basin No. 4 flowing into residential communities once the contamination reached the creeks. Mr. Wilkerson said monitoring was performed, and the physical monitors currently in place did not show an increase from the time of the initial discharge.

CAB member Calhoun asked if the sediment was tested and what was the overall condition of Sedimentation Basin No. 4. Mr. Wilkerson said Sedimentation Basin No. 4 and the creek were both monitored. He said the Sedimentation Basin No. 4 had been contaminated for many years, which was reported in the Environmental Report. He said the only characteristic monitoring noted was that there were not toxic components only radioactive components.

Mr. Wilkerson discussed the issue of elevated sample results at Groundwater Monitoring Well ZBG-2. He provided a diagram to show the overview of the Saltstone Facility as well as all the monitoring wells that were used to periodically take groundwater samples. He said samples were collected twice a year, and there had not been any results that exceeded the groundwater protection standards; however, he stated samples that were collected at the beginning of 2013 identified some increasing levels of constituents in ZBG-2. He said there were no elevated findings for groundwater monitoring wells ZBG-3, ZBG-4, or ZBG- 5, but the groundwater modeling indicated initial surface source contamination would have occurred approximately 15-20 years ago. Mr. Wilkerson explained that a Characterization Plan was developed to determine the extent of groundwater contamination around Vault 4. He said the Characterization

Plan had three phases of operation, each lasting approximately six to nine months per phase, and phase I was scheduled to begin in the first quarter of FY 2014. He listed future actions which would continue implementation of Vault four stabilization project, an excavation of contaminated soil at Z-01 Outfall, and the expansion of the Z-Area Sedimentation Basin No. 4 was ongoing. He said monitoring of Sedimentation Basin No. 4, Outfall Z-0l, and McQueens Branch would continue, while the Vault four Groundwater Characterization Plan would be implemented, along with the development and implementation of the Z-Area Basin No. 4 Groundwater Assessment Plan, which was requested by SCDHEC.

CAB member Walters asked if testing regarding runoff into the Savannah River was reported. Mr. Wilkerson said results were shared with SCDHEC.

CAB member Hayes asked if drought conditions were addressed in the Z-Area Basin No. 4 Groundwater Assessment Plan. Mr. Wilkerson said he had never seen the Sedimentation Basin No. 4 dry to where a cesium dust problem occurred; however, he said samples were collected and there had never been any airborne problems since the Sedimentation Basin typically had enough water. CAB member Hayes asked if the materials in Vaults one and four would be removed from SRS. Mr. Wilkerson explained that Saltstone was not relying on a High-Level Waste repository, but when the Z-Area Saltstone Facility is "closed" it will fall under the Federal Facilities Agreement (FFA) permit, which would be cleaned up according to CERCLA standards.

Mr. Van Keisler, SCDHEC, commented that all of Z-Area operated with a Solid Waste permit, and would maintain that permit as long as Saltstone was in operations, and tanks were being cleaned out. Mr. Keisler stated that once the mission was complete for removal of the High-Level Waste, and all SDUs were constructed and filled, then SCDHEC would transition the facility into an (FFA) permit, which at that point would be more involved for the final covering of the Z-Area facility.

CAB member Parson asked if a significant amount of rain could cause water to be flushed from Sedimentation Basin No. 4. Mr. Wilkerson said that should not occur due to the basin's design, and the amount of sediment currently in the basin. CAB member Parson asked what the final treatment activity was for the small amount of contaminated soil that was excavated. Mr. Wilkerson said the soil would be characterized and a disposal method would be decided after the results were known. Mr. Keith Liner, SRR, said that waste would be labeled as "decatergorized waste," so ultimately it will be packaged in B-12 containers, which is about 45 cubic feet of material, and goes to Nevada for ultimate disposal.

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 December 3, 2013 at the DOE Meeting Center.

Recommendation Voting

"Savannah River National Laboratory Future Planning"

CAB member Nangle reviewed the changes that were made to the proposed 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 22 votes of approval, no oppositions, and no abstentions. A copy of this recommendation has been attached to this document.

Public Comments

There were no public comments.

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

CAB member Rose Hayes thanked CAB member Bill Calhoun for providing the NM Committee update the day before since she was unable to attend the meeting. She reviewed her presentation from the day before and said she wanted to address the status of recommendations 307, 309, and 314. CAB member Hayes discussed the DOE responses for each of the three open recommendations.

CAB member Burke suggested closing recommendation 309, since leaving it open would not accomplish much. CAB member Nina Spinelli also suggested closing recommendation 309 and in the 2014 Work Plan developing a similar

recommendation with updated information. CAB member Hayes thanked CAB member Spinelli for her input, and agreed to write a new recommendation with new information during the next year. She said she wanted to change the status of recommendation 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" to "closed." CAB member Hayes explained she also wanted to leave recommendations 307, "Transferring Materials in L-Basin to Auxiliary Dry-Cask Storage," and 314, "Planning for Disposition of SRS Canisters," open until more information was available. She announced the next NM Committee meeting was scheduled for December 10, 2013, at the DOE Meeting Center.

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 three open recommendations. She said recommendation 293, "Remedial Actions and Cleanup of 235-F" would remain "open" until the FD&SR Committee received more budget information about DOE's plan to clean up building 235-F. CAB member Parson stated recommendation 294, "Development of Environmental Review Roadmap and Document Listing" would also remain "open" until the CAB discussed the SRS website with DOE at the end of the year. She reminded everyone that the next FD&SR Committee meeting was scheduled for December 3, 2013, and discussed presentations for that meeting. She welcomed Ms. Amy Meyer, SRNS, to begin her presentation.

PRESENTATION: SRS Environmental Report – Amy Meyer, SRNS

Ms. Meyer stated the purpose of her presentation was to satisfy a 2013 FD&SR Work Plan topic by providing an understanding of the results found within the 2012 SRS Annual Environmental Report. She said the data recorded in the report showed that operations at SRS had a minimal impact on the environment and public. She described the SRS Environmental Compliance Program, and listed specific regulatory standards that ensure the protection of the public and environment. She stated that the environmental monitoring program was comprised of two components: "effluent monitoring" and "environmental surveillance." She described effluent monitoring as the collection of samples from a point at which a facility discharged liquid or gaseous releases to the environment. Ms. Meyer said environmental surveillance dealt with the collection of air, water, soil, vegetation, milk, food products, fish, and other samples from the environment. Ms. Meyer explained that effluent monitoring was performed to demonstrate compliance with standards and to model radiological doses to the public; however, she stated environmental surveillance was used to monitor the pathways of exposure and doses to individuals and populations near SRS. She provided a diagram that represented four different exposure pathways to members of the off-site public.

She provided a chart titled, "Surveillance Monitoring of Exposure Pathways," to show the different media that were collected, and analyzed, to make up the air and water pathways for "radiological surveillance monitoring" and "non-radiological surveillance monitoring" pathways. Ms. Meyer discussed radiological effluent monitoring by showing two graphs that compared the "SRS Annual Atmospheric Tritium Releases" and "Direct Releases of Tritium to SRS Streams," over the past ten years. Ms. Meyer pointed out that both charts had a negatively sloping correlation, and stated during the year 2012, "SRS released a total of 16,796 curies versus 28,238 curies in 2011." She stated for 2012, non-radiological effluent monitoring found that storm water outfalls, and air emissions, were compliant with SCDHEC and the National Pollutant Discharge Elimination System (NPDES) permit requirements; however, she said industrial wastewater received one violation notice from SCDHEC for exceeding the copper limits for one outfall. She said DOE-SR did not receive any penalties or fines from SCDHEC since the situation was proactively addressed. She said storm water outfalls were 100 percent compliant with permit requirements. She showed a map that discussed the radiological liquid sampling locations before discussing non-radiological surveillance of water quality and fish samples. She explained that water quality parameters were measured at all 16 sampling locations, and it was determined that discharges from SRS did not impact the water quality in onsite streams or the Savannah River. She explained that 476 fish were collected along the Savannah River at various locations to determine concentrations of non-radiological contaminants, and the results indicated all samples were below the levels for the SCDHEC-issued advisories.

CAB member Ed Burke asked if the groundwater had been pumped from the ground to release tritium into the atmosphere. Mr. Patrick McGuire, DOE-SR, said that method had been successful where some tritium contaminated water was being used to water trees. Dr. Moody stated that contaminants that were in the environment from earlier operations at SRS were being sampled; however, SRS was not making an impact on tritium emissions from SRS.

Ms. Meyer discussed offsite monitoring in Georgia (GA) and South Carolina (SC), stating that SRS collected samples beyond SRS's perimeter to assess exposures to the public from SRS operations. She said sample locations varied from

25 to 100 miles from SRS. She provided a chart that showed the amount of offsite samples collected in GA and SC. She discussed radiological air surveillance results by providing a chart titled, "2012 Average Tritium-in-Air Results for 2008-2012," stating that the top line was the onsite "center of the site" levels, and for 2013 it was 172 picocuries per cubic meter, which was well below the limit of 2,000 picocuries per cubic meter.

CAB member Hayes asked what variables were included in the model of mapping radiological air surveillance results. Mr. Tim Jannik, SRNL, stated wind direction had the most effect of the doses around SRS. He said the calmest winds go in the northern direction, which was why there were higher doses in that area.

She discussed the radiological drinking water surveillance samples, which concluded that tritium concentrations remained well below the drinking water standard. She said the drinking water sample was 20,000 picocuries per liter and results from North Augusta, the Savannah River Mile 118.8, Purrysburg, Chelsea, and Savannah locations were all well below the standard. She explained that this year the "Maximally Exposed Individual" (MEI) was changed to a "Representative Person," and she provided a chart to compare the MEI and "Representative Person." She said the MEI used adult dose coefficients and only adult male parameters; however, the representative person was a much better representative of the population of the public since it had six categories for male, female, age groups, and weighted averages. She provided another chart titled, "Potential Offsite Doses," and stated that when adding together all the "atmospheric and liquid releases," the Representative Person would have experienced a dose of 0.26 millirem, which was well below the DOE limit of 100 millirem. Ms. Meyer said that SRS had a comprehensive environmental programing, and monitoring results demonstrated a long-term decreasing trend, and were well below regulatory and health-based standards since the Representative Person only received a low dose of 0.26 percent of the limit.

CAB Chair Bridges asked if the "Representative Person" was an international or national standard. Ms. Meyer explained that DOE Order 458.1 allowed for either MEI or a "Representative person" to be used.

CAB member Parson asked how the single numbers were calculated. Mr. Tim Jannik stated the number was the total amount of effluent releases from SRS. He explained that once a single source-term was calculated then the second figure was placed into environmental dosimeter models in order to determine the maximum dose to an individual. Mr. Jannik said the factors such as wind direction, how much people consume, and transfer from soil to plant were all input into the dose; however, the final number was the maximum dose of all sources from SRS.

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

CAB member Nina Spinelli said that everyone could begin voting for CAB Chair and Vice Chair and the election results would be announced by the end of the day. She asked for anyone interested in serving as a Committee Chair to inform the CAB Support Team since committee elections would be held at the January Full Board meeting. She encouraged everyone to visit the CAB Facebook page and the website at cab.srs.gov. She reminded everyone copies of the Fall Board Beat newsletter were available.

Results of Chair/Vice Chair Elections

Ms. Gerri Flemming, DOE-SR, revealed the results of the Chair/Vice Chair election. CAB members voted to elect Ms. Marolyn Parson as the CAB Chair,

Public Comments

There were no public comments.

~Meeting adjourned

Savannah River Site
Citizens Advisory Board

Recommendation 316
SRNL Future Planning

Background
The CAB recognizes that the Savannah River National Laboratory (SRNL) has played a vital and extremely important role in the development of SRS from the earliest days as a nuclear materials production site for national defense to the present SRS posture as an "environmental cleanup site." The development of technology for the national defense program includes some of the most innovative scientific work ever accomplished by the DOE or its predecessor organizations. The scientific work now underway is equally impressive with the nuclear waste processing and environmental cleanup technology now being developed and employed. As SRS clean-up reaches an advanced state it seems it would be wise to perhaps consider expanding the present scope of activities for such a technically capable organization.

Discussion
The SRS is now in what the CAB considers to be an advanced state of cleanup. Much of the Site land and facilities may soon become available for other missions and many of the facilities used in the cleanup may be "excessed." If the Site and its supporting technical arm (SRNL) are to realize growth it will quite likely necessarily involve other DOE program areas and the nuclear industry at large. Also, as CAB members reflecting local citizens interests we have ourselves increasingly become more interested in maintaining jobs and programs at SRS.

In the view of the CAB the linchpin of an expanded SRS is the technical program and capabilities of the Laboratory. We are aware that the SRNL has explored many avenues and sources of programs and funding and we support their aggressive actions. While we have only the view of an outsider it seems that it may be prudent to further these actions by:

- Making the Site nuclear cleanup capabilities more well-known to the nuclear industry (and private industry in general) and the general chemical industry. For example -
  - Are there schemes for handling tritium releases from a Pressurized Water Reactor (PWR) that SRNL could assist in?
  - Assessing the potential for use of Defense Waste Processing Facility (DWPF) glass technology for selective non-nuclear wastes.
  - Publicizing the capability of the High Level Waste Tank surveillance activities.
- Assessing where SRNL capability needs to be upgraded to make the Lab more competitive.
  - For example - Nuclear chemistry capabilities.
- Working with private industry and DOE HQ to assess a role for dealing with private nuclear power plant issues such as:
  - Extended spent nuclear fuel interim storage.
  - Potential recycle concepts and schemes.

- Publicizing and making known the SRNL capability as an applied science laboratory where ideas can be transformed into a real world device that meets a need in such areas as:
    - Separations technology
    - Hydrogen storage/transportation
    - Medical and industrial isotope production and application
    - Use of natural gas as a transportation fuel
    - Design of transportation packages for nuclear fuel and materials
    - robotics
- In general, thinking in the most expanded sense for potential SRNL opportunities or growth areas.

The list of SRNL accomplishments and technology is impressive and the CAB supports the expansion of the SRNL mission in any manner that is consistent with its capabilities.
Not only does the CAB support the SRNL we encourage it. We are supportive of ideas and concepts that stretch the thinking relative to the development of new missions for the Site.

The CAB would like to point out that the state of Idaho has taken aggressive measures to support the mission and programs at the Idaho National Laboratory. This work is documented and known as the LINE (Leadership in Nuclear Energy Commission) Program. An executive summary of their plans and activities is on-line at www.line.idaho.gov. A review of their activities may be helpful in further developing the SRNL programs.

Recommendation:
The CAB recommends that the SRNL

1. Develop a "Plan of Conceptual Ideas ("thinking outside the box") for areas that expand the role of the Lab and describe how some of these ideas and plans could be further developed.
2. Review some of the other National Laboratories (INL, LLNL, LANL) future planning for ideas and concepts that may be useful in further defining an enhanced SRNL role.
3. Present such a plan to HQ Environmental Management and other program offices such Nuclear Energy and Science for guidance and feasibility.
4. Advise the CAB of your present plans for increased funding and new missions.
5. Start a public outreach initiative, to include educational institutions (elementary through university level), to publicize their historical achievements, patents, national research & development awards, and accomplishments to reduce the current and future costs of Environmental Management operations at SRS.

Exchange Monitor

March 22, 2013

SAVANNAH RIVER CONSIDERING PROCESSING GERMAN HEU

In a potential new mission for the Savannah River Site's H-Canyon facility, Savannah River National Laboratory is undertaking research to determine possible ways to disposition a batch of highly enriched uranium from Germany. In an effort to minimize the amount of HEU in Germany, the Department of Energy's Office of Environmental Management is working with the Juelich Research Center in Germany on an R&D study regarding possible disposition pathways for AVR gas-cooled research reactor fuel. The R&D at SRNL is being undertaken with a $3 million grant from Germany under work for others and site officials plan on full cost recovery for the project. No German used fuel from this batch has arrived at the site and no decision has been made yet on whether the material will eventually be sent to Savannah River, but SRNL is conducting research on a sample of non-irradiated fuel from Germany.

That particular type of fuel presents a challenge, DOE Savannah River Operations Office spokesman Jim Giusti said, and it is too early to say whether or not the material can be processed in the site's H-Canyon facility." There have been attempts to try and separate [the AVR gas cooled fuel] that have not been successful. So what the lab is doing is trying to make sure that there is a pathway that actually will work, and what will it cost and how will you do that," Giusti said. "We have non-irradiated pellets here that they are going to work on. Once that research is done then there is going to be a lot of discussions with the Germans on whether they want to pursue that or not. So for me to tell you that it's going to go through H-Canyon at some point is premature." Because this is a new type of fuel there may be additional modifications to H-Canyon that could add to the cost and questions remain about how to handle the eventual waste, Giusti said.

The examination of the German fuel comes as the site is looking at numerous potential new missions for H-Canyon, a key part of site officials' vision for future work at Savannah River. Earlier this year, DOE officials said that they are moving ahead with plans to ship liquid highly enriched uranium from Canada's Chalk River Laboratory for downblending in H-Canyon (*WC Monitor*, Vol. 24 No. 7). That effort would fall under the National Nuclear Security Administration's Global Threat Reduction Initiative, an ongoing effort to return U.S.-origin HEU from foreign countries to the United States. Giusti said this week that it is too early to tell whether the German material would qualify under GTRI.

—*Kenneth Fletcher*

German AVR spent fuel form

Rudolf Printz, Leiter des Bereiches Nuklear-Service im Forschungs-Zentrum Jülich, zeigt das Modell einer Graphit- Brennelemente-Kugel. (Andreas Endermann (dpa))

Castor Casks in Germany - containing AVR gas reactor irradiated spent fuel

November 6, 2013

Mr. Anthony Patko
Director, Licensing
Engineering
NAC International
3930 East Jones Bridge Road, Suite 200
Norcross, GA 30092

SUBJECT: EXTENSION OF AUTHORIZATION FOR A ONE-TIME SHIPMENT OF THE DOUNREAY FUEL CONTENTS IN THE MODEL NO. NAC-LWT PACKAGE (TAC NO. L24756)

Dear Mr. Patko:

As requested by your application dated June 12, 2013, pursuant to Title 10 of the *Code of Federal Regulations* Part 71, Certificate of Compliance (CoC) No. 9225, for Model No. NAC-LWT package, is amended with the following condition:

A one-time shipment of five (5) special fuel assemblies in the currently certified Model No. NAC-LWT transportation package specified as follows:

- Three (3) 4x4 square EK-10 rod arrays (two with 16 rods; one with 15 rods)
    - UO_2-Mg fuel matrix/Al clad
    - Nominal 10 wt.% U-235
    - < 120 g U-235 per array
    - The maximum amount Uranium per assembly analyzed is 1400 g
    - The maximum burnup analyzed is 20,000 MWd/MTU
    - The minimum cooling time is 28.3 years
- One (1) concentric tube ITR assembly (four square tubes)
    - U/Al alloy fuel/Al clad
    - Similar to DIDO assembly currently authorized, but uses four square "boxes" instead of cylindrical tubes
    - Nominal 90 wt.% U-235
    - < 170 g U-235 per assembly
    - The maximum Uranium per assembly analyzed is 220 g
    - The maximum burnup analyzed is 15,000 MWd/MTU
    - The minimum cooling time is 10 years
- One (1) hexagonal array (91 rods) TTR assembly
    - U/Al alloy fuel/Al clad
    - Nominal 90 wt.% U-235
    - < 400 g U-235 per assembly

- The maximum Uranium per assembly analyzed is 500 g
- The maximum burnup analyzed is 60,000 MWd/MTU
- The minimum cooling time is 22.6 years

The assemblies will be transported in the currently certified Metal Test Reactor (MTR) basket with the center basket opening blocked to prevent misloading.

The following additional conditions apply:

- All other conditions of CoC No. 9225 shall remain the same.
- This authorization shall expire on December 31, 2014.

If you have any questions regarding this authorization, please contact me or Bernie White of my staff at (301) 287-0810.

FOR THE U. S. NUCLEAR REGULATORY COMMISSION

/RA/

Michele M. Sampson, Chief
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9225

Enclosure: Safety Evaluation Report

cc: R. Boyle, Department of Transportation
J. Shuler, Department of Energy, c/o L. F. Gelder

- The maximum Uranium per assembly analyzed is 500 g
- The maximum burnup analyzed is 60,000 MWd/MTU
- The minimum cooling time is 22.6 years

The assemblies will be transported in the currently certified Metal Test Reactor (MTR) basket with the center basket opening blocked to prevent misloading.

The following additional conditions apply:

- All other conditions of CoC No. 9225 shall remain the same.
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If you have any questions regarding this authorization, please contact me or Bernie White of my staff at (301) 287-0810.

FOR THE U. S. NUCLEAR REGULATORY COMMISSION

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Michele M. Sampson, Chief
Licensing Branch
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Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9225

Enclosure: Safety Evaluation Report

cc: R. Boyle, Department of Transportation
J. Shuler, Department of Energy, c/o L. F. Gelder

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SAFETY EVALUATION REPORT

Docket No. 71-9225
Model No. NAC-LWT
Certificate of Compliance No. 9225

By application dated June 12, 2013, NAC International (NAC) requested an extension to letter authorization to Certificate of Compliance No. 9225 for the Model No. NAC-LWT transportation package that was issued on January 10, 2012, to permit a one-time shipment of five special fuel assemblies.

This authorization is necessary to support a shipment from the Dounreay Nuclear Facility in Scotland to the Savannah River Site in the U.S. The package loading operations and the shipment schedule will be established by the U.S. Department of Energy National Nuclear Security Administration Foreign Research Reactor program. NAC requested a 1-year extension to the authorization period for this one-time shipment based on the fact that the shipments may not occur in 2013. This shipment is in the interest of U.S. national security.

Certificate of Compliance No. 9225 has been amended by letter based on the statements and representations in the application, and staff agrees that the changes do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Certificate of Compliance No. 9225 has been amended by letter for a one-time authorization to ship the five special fuel assemblies in a currently authorized metal test reactor basket in the Model No. NAC-LWT package. This authorization expires December 31, 2014. Based on the statements and representations in the application, and with the conditions listed above, the staff agrees that this authorization does not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued on 11/6/2013.