

Meeting Minutes

Savannah River Site Citizens Advisory Board (CAB)—Combined Committees Meeting

Hilton Garden Inn, Augusta, GA

September 26, 2016

Monday, September 26, 2016 Attendance:

<u>CAB</u>	<u>DOE/Contractors/Other</u>	<u>Agency Liaisons</u>
Gil Allensworth	Zach Todd, DOE-SR	Trey Reed, SCDHEC
Tom Barnes	Patrick McGuire, DOE-SR	Gregory O'Quinn, SCDHEC
Louie Chavis	Thomas Johnson, DOE-SR	Deidre Lloyd, EPA
Susan Corbett	Jack Craig, DOE-SR	Sandra Snyder, SCDHEC
Robert Doerr	Maxcine Maxted, DOE-SR	Susan Fulmer, SCDHEC
Dawn Gillas - <i>Absent</i>	Terry Spears, DOE-SR	Heather Cathcan, SCDHEC
David Hoel	Gail Whitney, DOE-SR	<u>Stakeholders</u>
Eleanor Hopson	Charles Comeau, DOE-SR	Moses Todd, Public
Virginia Jones	Kent Rosenburger, SRR	Tom Clements, SRS Watch
Daniel Kaminski	Eric Doman, SRNS	Rose Hayes, Public
Jim Lyon	Jay Johnson, SRNS	Pamela Greenlaw, Public
John McMichael - <i>Absent</i>	Ron Oprea, SRNS	Marolyn Parson, Public
Clint Nangle - <i>Absent</i>	Ginger Humphries, SRNS	Tom Hallman, Public
Cathy Patterson	Amy Meyer, SRNS	Shandra Drayton, Public
Larry Powell	Kim Cauthen, SRNS	Ponifa Eaves Hotchkiss, CNS
Bill Rhoten	Kristin Huber, SRNS	Liz Goodson, Public
Earl Sheppard - <i>Absent</i>	James Tanner, Time Solutions	Dara Glass, BWST
Harold Simon - <i>Absent</i>	Chelsea Gitzen, Time Solutions	Jim Tisarami, Public
George Snyder	Federica Staton, Time Solutions	Joe Ortaldo, Public
Nina Spinelli		Mike Johnson, CNTA
Ed Sturcken		Laura Lance, Public

Louis Walters
Mary Weber

Gary Dexter, Public
Connie Young, Public
Sarah Cohen, Public

Opening: Nina Spinelli, CAB Vice-Chair
Ms. Spinelli welcomed everyone to the combined committees meeting.

Meeting Rules & Agenda Review: Sonya Goines, DOE-SR Facilitator
Ms. Goines reviewed the meeting rules and the agenda for the day.

Administrative and Outreach Committee Update: Eleanor Hopson, Chair
Ms. Hopson welcomed everyone and introduced the committee members. She noted that the membership drive has ended however; they are still seeking to replace members next year. Membership applications were available on the back table. To be considered for the next term, you must complete your applications. The Spring 2016 edition of *Board Beat* magazine was available on the handout table. She informed the members of the up and coming outreach events and recommended they volunteer.

Facilities Disposition and Site Remediation Committee Update: Tom Barnes, Chair
Mr. Barnes welcomed everyone. The committee had no open or pending recommendations. The next committee meeting will be held October 11th, 4:30-6:20 pm. He advised everyone to make a note that the meeting location has changed to the DOE Meeting Center. He then introduced the presenter, Eric Doman.

Presentation: Air Monitoring, Eric Doman, SRNS

Mr. Doman introduced himself and thanked the board for inviting him to present. He introduced his colleagues Gail Whitney and Teresa Eddy. Mr. Doman provided an overview of the SRS Air Surveillance Program. Mr. Doman began the presentation with information from the 2014 Annual Site Environmental Report (ASER). The report identified that radionuclides are below 1% of the EPA dose standard of 10 mrem/yr. Mr. Doman explained that the program also monitors the amount of tritium in rainwater. Concentrations from all the locations that they monitor are below the EPA drinking water standard of 20,000 picoCuries per liter.

To provide a reference to the amount of land that the program monitors, Mr. Doman compared the size of the site to the perimeter of Atlanta, the beltway of Washington, DC and area combination of Aiken, Augusta and North Augusta.

Starting in the 1950s, the site produced nuclear materials. We had 5 reactors that were built during that time and remained in operation until around 1988. Mr. Doman stated that the purpose of monitoring is to ensure the protection of the public and the environment and to comply with federal and state regulations. Monitoring also reveals critical pathways for exposure. Mr. Doman further defined the pathways for exposure as routes by which released contaminants are transported or likely be transported to individuals. Monitoring also allows SRS

to determine preoperational conditions, perform dose and risk assessments, and to inform stakeholders surrounding the plant.

Site monitoring has evolved over the years. Environmental baseline studies began in the 1950s at SRS. Scientists from UGA and USC collected baseline data in plant and animal communities. Over 6,600 samples over 6,000 square miles were collected to determine background levels. A team from the Academy of Natural Sciences in Philadelphia, under the leadership of Dr. Ruth Patrick, performed a biological study of the Savannah River. DuPont's site survey team helped physics personnel complete a landmark study of local natural radio activity.

SRS monitoring program was established in 1953. Mr. Doman reiterated that SRS performs monitoring to meet state and federal regulations and DOE orders. The results are used to determine how operations at the site affect the community and the environment. Specifically, DOE Order 458.1, Radiation Protection of the Public and Environment, specifies radiation dose standards for individual's members of the public. Environmental monitoring (in DOE Order 458.1) includes such things as effluent monitoring, meteorological monitoring, preoperational monitoring and environmental surveillance (which he is focusing on in his presentation). When SRS performs environmental monitoring they cover an area of 2,000 square miles that includes both sides of the Savannah River.

Mr. Doman presented a diagram that displayed principal exposure pathways. He identified liquid and air as the two primary contaminate pathways that they study. The principal pathways by which people are exposed to releases of radio activity are inhalation, ingestion, absorption and external exposure. The program samples various types of media. During routine operations at the site radioactive materials are incidentally released to the environment through the atmospheric and or liquid pathways. These releases could potentially result in radiation dose commitment to offsite people.

Mr. Doman moved on to explain the difference between effluent monitoring and environmental surveillance. Effluent monitoring is the collection of samples or data from the permitted point at which a facility discharges liquid or gaseous releases to the environment. Environmental surveillance is the collection of samples of air, water, soil, foodstuffs, biota and other media, or of data from the ambient environment beyond the point of discharge. Mr. Doman provided the example of a wood burning fireplace at a place of residence. If a sample monitoring station is placed at the edge of the chimney where soot and carbon are emitted this would be a point of discharge effluent monitoring. If a sampler was placed at the edge of the neighborhood, beyond the point of discharge, this will be environmental surveillance. The samples that the program takes are analyzed for radioactive and non-radioactive contaminants to access trends in different environmental media. Mr. Doman emphasized that the program collects samples beyond the SRS perimeter in Georgia and South Carolina at 25 and 100 mile locations from the site in the population centers of Aiken, Allendale, Barnwell, New Ellenton, North Augusta and Williston South Carolina. The locations in Georgia include Augusta, Waynesboro and Savannah.

Radionuclides present in and around the SRS environment are from a number of sources, including natural background, fallout from historical atmospheric testing of nuclear weapons, offsite nuclear power plant operations, offsite non-routine releases such as Fukushima disaster in 2011, and SRS operations. SRS conducts atmospheric surveillance to determine whether airborne radionuclides from SRS releases have reached the environment in measurable quantities. Mr. Doman indicated that they want to make sure that their activities

have not affected the air of the Site's nearby communities. The atmosphere contains radionuclides in various forms (gaseous, particulate matter, water vapor). Rainwater can redeposit particulate matter from the air onto the ground and the radionuclides can eventually be absorbed into vegetation or soil. The atmospheric surveillance program monitors both air and rainwater. Currently, SRS maintains a network of 14 atmospheric surveillance sampling stations in and around SRS to monitor the concentration of tritium and radioactive particulate matter in the air and rainwater.

Mr. Doman characterized the air monitoring locations and why those locations were selected. SRS has 11 monitoring stations on site and three located at the 25-mile radius, the Augusta Lock and dam, Aiken Airport and the US 301 bridge. The US 301 bridge is used as a control location that should not be impacted by site operations. Stations are placed in the center of site; in a ring around site perimeter; at a regional reference location assumed to be unimpacted by site operations at 25 miles, and in population centers at 25 miles. Placement on the site boundary was designed to ensure that at least one monitoring station is located in every 45-degree sector.

Mr. Doman went on to describe the schematics of the air station. He provided a schematic and outlined the components of the station. The rotary vane pump operates continuously 24/7. He described that the rotary vane pumps functions essentially as a big vacuum that pulls through a double two sided system. On the left of the station is a filter head that contains a glass fiber filter in a charcoal canister. On the right of the station is a silica gel column. Airborne particulates and radio iodine are collected using a glass fiber filter paper and an activated charcoal cartridge. The flow regulator pump is used to pull air through the dual filter system at a rate of approximately 74 liters per minute. Tritium oxide measurements are obtained by collecting air moisture on silica gel columns where the moisture is trapped on the column by moving air through the system by the pump at a rate of approximately .5 liters per minute.

Mr. Doman mentions that the systems are set up for a bi-weekly sampling. The filter holder housing holds the glass fiber filter above the charcoal canister. The glass fiber filter is used to measure airborne particulate matter (gamma-emitting radionuclides, gross alpha/beta emitting radionuclides). The charcoal canister is used to measure potential gaseous states of radioiodine specifically iodine-129, iodine-131 and gamma-emitting radionuclides. The silica gel measures tritiated water vapor. Mr. Doman explained that the silica gel is important because it allows them to actively measure the tritium in the air. An accurate measurement of the moisture contained between the sampling periods is obtained by weighing the silica gel columns before and after the sampling. These specific radionuclides are selected based on known airborne releases. Rainwater is also collected for monthly sampling for tritium. The rainwater passes by gravity from the pan through tubing directly into a collection bottle.

Mr. Doman summarized and concluded his presentation by stating that SRS performs environmental monitoring to meet state and federal regulations and DOE orders to ensure protection of the public and the environment. SRS conducts atmospheric surveillance beyond the point of discharge to determine whether airborne radionuclides from SRS releases have reached the environment in measurable quantities. SRS has a network of 14 atmospheric surveillance sampling stations in and around SRS to monitor the concentration of tritium and radioactive particulate matter in the air and rainwater.

David Hoel, CAB Member, noted that the air monitoring station located at the 301 bridge serves as a control. Mr. Hoel asked why that downwind location was chosen versus a location further west.

Mr. Doman explained that they have found based on modeling and results from atmospheric technologies groups that the wind based patterns that most of the sites winds flows north to north east and that is why the particular location was chosen.

Strategic and Legacy Management Committee Update: Bob Doerr, Chair

Mr. Doerr welcomed everyone to the meeting and introduced the committee members. Recommendation 355 is open and the committee has received a response from DOE to the recommendation. Mr. Doerr made a motion to accept and close the recommendation and the recommendation was closed. There was one draft recommendation to discuss. The next committee meeting will be held October 11th, 6:30-8:20 pm. He advised everyone to make a note that the meeting location has changed to the DOE Meeting Center. He then introduced the presenter, Zachary Todd.

Presentation: Military Training Zachary Todd, DOE-SR

Mr. Todd provided an overview of Military Training activities conducted at SRS. He began his presentation by noting that the military is facing a land shortage situation. South Carolina's National Guard is 30,000 acres short of training land. This shortage allowed them to seek potential training locations. Technology changes in weapons, base closures and environmental restrictions have led to the need for additional land.

Mr. Todd explained how DOE's interest in National Security is compatible with SRS's missions and SRS Strategic Plan to find alternative uses for the land. SRS's facilities that are pending demolition or not being used can also be used to aid in training. Mr. Todd stated that the Interagency Agreement allowed Fort Gordon to utilize SRS's land for training but due to budget constraints Fort Gordon couldn't continue to coordinate training at SRS. The South Carolina National Guard then began to manage training at SRS.

Mr. Todd noted that military training will not interfere with site operations and there are no incremental costs to SRS. The military is responsible for training activities and overall safety of the activities. The training events are pre-coordinated and approved by DOE and limited to specific areas during specific times. Mr. Todd explained that the briefing system associated with the training events helps everyone know the agenda, avoid scheduling conflicts, and allows everyone to "have all their ducks in a row".

Mr. Todd stated that the military is interested in SRS primarily for its large complex facilities. Savannah River National Lab is also able to conduct military training. The training the lab can provide is unmatched by any other training facility.

Mr. Todd detailed the driving factor in training at SRS is assisting the site needs. Last year the South Carolina National Guard merged its training requirements with SRS's projects and was able to complete three projects at the site. This past summer, the South Carolina National Guard completed Phase 2 of the 288F Ash Basin. Allowing the SCNG to use the Ash Basin as a training activity saved DOE over a million dollars.

Q&A Session

Louis Walters, CAB Member, asked about the process of inviting other military units and allies to utilize the site for training.

Mr. Todd states that they have had the request from foreign allies but due to security reasons those requests have been denied.

Jim Lyon, CAB Member, asked if the battalion commander was present for the meeting and if the SCNG unit has been publicly recognized for their work. He also asked about inviting the battalion commander to speak at a meeting further explain any challenges associated with the project.

Jim Guisti, DOE-SR, explained that the two projects that the SCNG have worked on have been journalistically covered through press releases, photos, social media updates and military trade publications. SRS is working with the military to publicize the work done at the site.

Jim Lyon, CAB Member, noted that his concern wasn't with who publicizes the projects but rather a general question about publicizing the work.

Nina Spinelli, CAB Vice-Chair, suggested to Mr. Lyon that he write a recommendation on that topic.

Jim Lyon, CAB Member, thanked Ms. Spinelli for the suggestion. He further commented by expressing the value of the work performed needs recognition.

Mr. Todd also answered by explaining that the leaders of the SCNG are invested in SRS. They have communicated the projects to the National Guard Bureau and General Catibay. Members throughout the chain of the command have been informed and briefed on the projects at SRS.

Nina Spinelli, CAB Vice Chair, suggested that Mr. Lyon address his concerns to Mr. Todd during the break. David Hoel, CAB Member, asked if any bases have been closed in South Carolina. An Agency liaison from DHEC answered yes, the Myrtle Beach Air Force Base and Charleston Naval Complex were closed.

Mr. Hoel asked if the National Guard needs 30,000 acres why were the bases closed.

Mr. Todd responded by saying that base closure was only one factor in needing more space.

Mr. Hoel: How much of your time is devoted to this work? Mr. Todd: 5-10% of my time.

Mr. Hoel: How much of Centerra's and their security for these exercises time is devoted?

Mr. Todd: The majority of the training events happen west of 125 on the D area side so there are not a lot of extra security precautions that have to take place

Mr. Hoel: You mentioned that there is no incremental cost to SRS but there is some unless the site is being reimbursed.

Mr. Todd: We may spend some time on an activity but we aren't spending additional money to fulfill these requests

Mr. Hoel: the IAG between DOE and SCNG has been in negotiation for over 2 years what is the hang up?

Mr. Todd: There have been some issues but not from DOE.

Mr. Hoel: Can you elaborate?

Mr. Todd: Not really. There are some issues on their side that they are working through.

Mr. Hoel: What is going to occur on those 700 acres of land that the SCNG was trying to lease?

Mr. Todd: There will be an EA available for public comment hopefully in the coming months that illustrate what that plan is.

Mr. Hoel: You can't say now?

Mr. Todd: The EA will provide better detail than what I can but throughout the EA there is mention of construction of different facilities.

Mr. Hoel: What are sludge lanes?

Mr. Todd: Our waste treatment plant at SRS for black water "sewage" is cast out to dry in these tubs and the way you get rid of the waste that is left in the tubs are these lanes of fertilizer.

Mr. Hoel: So you guys get to clean these things out?

Mr. Todd: A tractor and a manure spreader goes in-between the trees and spread out the sludge
Susan Corbett: Where do these military personnel reside?

Mr. Todd: All throughout the nation.

Susan Corbett: When they come, how long are they here?

Mr. Todd: It depends on the training event. Some of the training events that SRNL host last a week and they stay in local hotels eating and adding to the local economy. A lot of the training events that happen especially with the soft units don't require the personnel to stay longer than a few hours.

Susan Corbett: So is that the model that they are going to use? People would only have short stays?

Mr. Todd: Not necessarily. There are many different units. You have units that have expressed a lot of interest in coming to Savannah River Site especially because of some of the facilities and some of the training that the national lab has but right now we do not have the infrastructure to support these units.

Susan Corbett: Is there a plan to build this infrastructure?

Mr. Todd: The EA has the master plan on how they envision the 750 acres. The EA will also discuss the types of facilities.

Susan Corbett: They wouldn't actually live on the site; they would have to live offsite somewhere right?

Mr. Todd: There will be a way for them to sleep on site but they aren't living there for extended duration.

Ed Sturken: Who will perform the construction?

Mr. Todd: We have overall control of making sure it fits in our interest but we do not control which contractor is chosen to construct the facilities.

Ed Sturken: The National Guard does this work for nothing?

Mr. Todd: That is the great thing about this process. We merge their training requirements and allowed them to do meaningful work.

Moses Todd, Public: Who has priority as far as land use, and what are the security and storage issues?

Mr. Todd: All of the soldiers that go on site go through our screening process. They may not receive badges but most do. We use the soldiers' CAC cards and we have a process that screens them and all of their names are on a roster and they go through our security process. To my knowledge, we haven't had any problems besides some foreign nationals attempting to attend training. The lease isn't permanent DOE will always have the right to cancel the lease.

Discussion of Draft Recommendation: "Revision of the Savannah River Site Community Involvement Plan"

David Hoel, CAB Member, presented the recommendation.

Bill Rhoten, CAB Member, suggested changing publicly announced to announce publicly. Mr. Hoel agreed.

Louis Walters, CAB Member, asked for clarification on the statement "CERCLA and Part 300 of the National Contingency Plan requires development of a Community Relations Plan (CRP) for removal actions where onsite action will last longer than 120 days". He proposed to add the word "this" to clarify that they are addressing one action. Mr. Walters also proposed that because the draft addresses a long period of time, the draft should state the specific cleanup budgets and missed milestones. Mr. Hoel states that the previous draft gave more detail but the CAB suggested removing that section because it took away from the drafts purpose.

Virginia Jones, CAB Member, suggested punctuation and grammatical edits.

Mary Weber, CAB Member, suggested some phrases be adjusted to make sure a neutral approach is taken. Mr. Hoel suggested that an explanation be added rather than removing the phrases.

Bob Doerr, S&LM proposed that the focus should be on the recommendation and the CAB's position rather than background information.

Gil Allensworth, CAB Member, asked Mr. Hoel to define "rebaselining"

Mr. Hoel defined baselining as setting up the entire basis for the involvement plan. In 1991, they needed to find out by investigating with the community, what members of the community considered important issues concerning the SRS clean-up program.

Gil Allensworth, CAB Member, then asked if the CAB is asking for an update or a complete baselining including past and present years.

Mr. Hoel, stated that it is both. He believes they should take a deep dive into the past to expand upon future work.

Mr. Allensworth then questioned how DOE would analyze recommendations and position statements from 25 years ago.

Mr. Hoel said that he isn't going to advise DOE on how to analyze the data but he does want the focus to be on how public perceptions, concerns and opinions have evolved over the past 25 years.

Dan Kaminski, CAB Member, suggests adding the sites successful activities to change the tone of the recommendation.

Jim Lyon, CAB Member, commented on budget and baselining concerns.

Pat McGuire, DOE-SR, stated that budgets have increased and suggests altering

Jim Guisti, DOE-SR, suggests removing sentences that justify the recommendation because the Recommendation already states what DOE needs to do and they understand that it is necessary. Mr. Hoel said he would consider these changes.

Bob Doerr, S&LM Chair, states that the CAB shouldn't prejudge DOE's response in the Recommendation.

Waste Management Committee Update: Dr. Virginia Jones, Vice Chair

Dr. Jones welcomed everyone to the meeting and introduced the committee members. The committee has no open recommendations, one pending recommendation and one draft recommendation. The next meeting will be held October 4, 6:30-8:20 pm. Dr. Jones then introduced Jon Lunn, the SRR SDU 6 project manager.

Presentation: SDU-6 Status Jon Lunn, SRR

Jon Lunn gave an overview of Saltstone Disposal Unit 6. He began his presentation with a diagram depicting how the saltstone units fit into the process. The saltstone disposal units are the repository for the decontaminated salt solution that gets mixed with grout. The process begins with the legacy materials that were processed in the canyons and sent to the tank farms. As the waste is processed out of the tank farms, salt solution goes to ARP/MCU where the actinides are removed. After the actinides are removed, the solution goes to the DWPF facility where it is processed into glass canisters and the decontaminated salt solution goes to the saltstone production facility and is mixed with grout and ultimately disposed of into the saltstone disposal units.

Mr. Lunn provided information on the previous saltstone disposal units. SDU 2, 3 and 5 were reinforced concrete cells 150 feet in diameter and 22 feet tall. These units were capable of

storing 3 million gallons of grout. These cells were back graded to the roof level. SDU 2 was placed into service in 2011 and filled by 2014. SDUs 3 and 5 were placed into service in 2015 and plan to accept Saltstone grout through 2017.

Mr. Lunn explained that SRR provided a cost savings initiative to the DOE on future saltstone disposal options. SRR determined that the mega SDU is more economical. The cost savings estimated by DOE is approximately \$300 million over the saltstone project life-cycle. The Mega SDU reduced the amount of infrastructure needed.

The foundation of the Mega SDU is 12 inches thick and was poured into 10 sections. The tank consists of 2,636 cubic yards of 25 wall panels, 208 columns, 289 miles of pre-tension wire and 294 cubic yards of shotcrete to protect the wire from the environment.

The Seismic Design of the tank was robust. There is a sheer connection between the roof and the floor and that connection pre-stresses the walls vertically. There are also seismic lateral cables for support in case of earthquakes.

The project baseline included installation of an interior coating system to protect the concrete from Sulfate attack per ACI code requirements. Water tightness tests were performed prior to application of internal coating to pursue a future opportunity to eliminate coating if sulfate testing showed positive results. The water tightness test did not pass the zero leaks requirement as a result; a robust coating liner system is presently being installed in the tank to achieve water tightness. In December 2015, SRR attempted to repair the leaks using epoxy injections but there continued to be leaks. SRR consulted with industry experts for a Systems Engineering Evaluation to determine a future plan. An Engineering Study Report (ESR) completed in May recommended an elastomeric liner system (REMA 4CN) to provide leak tightness. SRNL tested the product and it successfully passed a 1,000 hour salt solution soak test. The REMA 4CN installation is currently underway. The liner system is made of up multiple layers to help with testing and to ensure its quality.

The tank's completed systems include the grout distribution system, drain water system, modular instrument and temperature monitoring. Passive ventilation, power, cameras, and lighting are ongoing projects and expect to be completed after hydro leak testing.

Mr. Lunn concluded his presentation by stating that SRR selected the best synthetic liner system on the market and utilized qualified and certified liner installers to ensure SDU 6 leak tightness. To validate that SDU 6 meets water tightness requirements a final hydrotest will be performed at 41 feet. The project continues to show positive performance from a schedule and cost perspective. SDU 6 is on track to meet the system plan need date.

Q&A Session

Bill Rhoten, CAB Member, asked if the leaks were in the floor, what prompted the liners to be placed on the walls as well.

Mr. Lunn explained that they wanted the liner to be the primary boundary for leak tightness so the decision was made to move from concrete being the main boundary for leak tightness and have the liner be the primary boundary for leak tightness. The walls did not leak during the hydro test.

Jim Lyon, CAB Member, asked Mr. Lunn to explain the difference in expansion joint rubber and 4CN rubber.

Mr. Lunn responded that 4CN rubber is a 3 millimeter thick rubber that can be compared to a robust wetsuit rubber. 4CN has a stretching capability of around 400% and is resistant to many chemicals. 4CN is used to line tanks that store strong acids and is the same material being used on the expansion joints.

Mr. Lyon then asked about the service life of an expansion joint.

Mr. Lunn said at least 25 years but, he will give Mr. Lyon a more precise estimate at a later date.

Mr. Lyon asked if there is a system for replacing the expansion joint.

Mr. Lunn replied that there is a methodology for replacing the joint. Currently a design is being reviewed that has several layers in the joint that overlap each layer.

Mr. Lyon asked if budgets will need to be adjusted to account for periodic replacement of the joint.

Mr. Lunn explained that once the tank is filled with grout then the liner becomes a monolith so a replacement wouldn't be necessary.

Ed Sturcken, CAB Member, asked if the process would be replicated.

Mr. Lunn states that they plan to use this design on the next SDU and there have been lessons learned from the current project. There have been studies conducted to develop a concrete mix that won't shrink as much as the current mix. New techniques are also being reviewed.

Susan Corbett, CAB Member, asked since the liners are not designed to be replaced what happens if a liner leaks after being filled.

Mr. Lunn replied that the tanks are significantly tested to ensure that it is leak free prior to use. The 41 foot of head height tested is the highest load put on the tank. Once you begin filling a tank with grout there is a sump system that keeps the head pressure at the two foot level. Once that test is passed the tank cannot fail.

Ms. Corbett asked if there is a plan when the tanks begin to leak after 300 years.

Mr. Lunn replied that the next presentation will help further explain that answer.

David Hoel, CAB Member asked if there were lysimeters under the tank to measure leaks.

Mr. Lunn explained that there are no lysimeters but there are 4 sumps around the tank with high-density polyethylene liners. The liner system would catch any leaks and slope it to the sump system and the sump system has rad detectors.

Louie Chavis, CAB Member asked if there were any plans to prepare for lightning.

Mr. Lunn answered that the control system is grounded for lightning but the top of the tank does not have a lightning protection system. Lightning protection was considered but studies

concluded that the remote activity that happens on top of the tank is rare and only happens in clear weather so it was determined that lightning protection was not required.

Presentation: Saltstone Performance Assessment Kent Rosenberger, SRR

Kent Rosenberger began his presentation by defining a Performance Assessment as a key risk assessment tool used to inform disposal and closure decisions. A PA is required by DOE Manual 435.1-1 for low-level waste disposal facilities and models fate and transport of constituents disposed in facility over long periods of time to determine potential future interactions with the environment and public. A performance assessment looks at an entire facility after closure and considers long term consequences by utilizing informed inputs and assumptions.

The PA describes the calculation of most defensible dose consequences or chemical concentrations over time and focuses on determining peak dose or chemical concentration over the time period. The PA reflects the worst concentration over a one-year period. The PA also indicates potential variation in parameters and identifies key parameters for which the model has the greatest importance.

Mr. Rosenberger stated that SRR maintains active performance assessments for F-Tank Farm, H-Tank Farm and for the low level waste Saltstone Disposal Facility. The DOE and the NRC have performance objectives for low level waste disposal. The performance objectives focus on a future member of the public (MOP) and a future hypothetical inadvertent human intruder (IHI) (someone who builds a house or drills into the disposal facility or defeats the institutional controls in place). The performance metric is 23 mrem a year and 500 mrem a year for the future Member of the Public and future hypothetical inadvertent human intruder respectively. SRR calculates contaminate concentrations at points 1-meter and 100-meters from a closed disposal facility. The 100 meter data is used to evaluate MOP performance objective. 1 meter data is used to evaluate IHI performance objective.

Mr. Rosenberger explained another facet of the performance objective; Unreviewed Waste Management Question Program (UWMQ). The program was put in place to meet the requirements of DOE Manual 435.1 which state that a change control process is required. The program has a structured process for evaluating facility changes and new data. The program ensures that new data, information and proposed activities are reviewed against an existing baseline. If the engineers cannot determine the impact of change a special analysis is done to evaluate and decide which action to take.

The current PA, issued in 2009, was developed by SRR and reviewed by DOE-SR, DOE-HQ (LFRG), SCDHEC, EPA, NRC and the public. Since 2009, SRR has performed two special analyses in FY2013 and FY2014 to evaluate changes in the anticipated closure conditions versus those in the PA. SAs are approved by DOE have been reviewed as part of normal DOE oversight and NRC NDAA as a part of their section 3116 monitoring.

Mr. Rosenberger presented a diagram of the doses from the 2014 special analysis and predicted tank ground water flow. During the evaluation of SDU 6, SRR assumed that the SDU 6 floor and roof are fully degraded leading to a bounding model compared to actual conditions. The impact that derived from the evaluation was an approximate 10% increase in the sector I dose however; there was no change to the predicted overall facility peak dose in Sector K. He then concluded his presentation by reiterating that the condition of SDU 6 floor and roof do not impact the closed facility calculated peak dose, the ability to meet performance objectives, or the

conclusions of closure documents. Newly collected data and information is continually being evaluated against the predictive modeling for potential impacts and more changes will continue to be evaluated. The entire process is monitored and reviewed by DOE per DOE Order 435.1 and by NRC per NDAA section 3116.

Q&A Session

Susan Corbett, CAB Member, asked about the migration of exposure in drinking water and the impact of climate change.

Mr. Rosenberger replied that there are 3 levels of aquifers below the general separation area at SRS. The top two are both incised by two streams behind saltstone all that eventually discharge to the Savannah River. Those are things that are looked at in the site composite analysis which is another document that looks at all the facilities at SRS not just one individual site.

Ms. Corbett asked if there would be enough space for the tanks because according to the map the tanks cannot fit.

Mr. Rosenberger assured Ms. Corbett that there is enough space available for the tanks. The angle in which the picture was taken doesn't depict the area to scale. One of the things that they look at is variation; in filtration rates they place a robust closure cap over the facility to limit water infiltration because the saltstone facility water can transport things out of the disposal cell in long periods of time and we monitor variations in that filtration rate over time in both weather condition directions.

Ms. Corbett asked about if cesium is the main dosage they evaluated.

Mr. Rosenberger said that cesium has a 30 year half-life and in 300 years it is gone. The peak dose is Iodine 129.

Ms. Corbett asked which chemical would have the potential to last the longest.

Dan Kaminski, CAB Member, asked if water would be permeable when the grout is set.

Mr. Rosenberger explained that there is a very low hydraulic conductivity.

Dan Kaminski, CAB Member: is the long term affect to keep the tanks sealed to keep the ground water out or keep the grout in?

Mr. Rosenberger: In the operational period, to keep the grout in but in the long term perspective the goal is to keep the water out

Dan Kaminski: is there any intermingling between the layers, the prior levels prematurely absorb the moisture from the incoming levels

Mr. Rosenberger: It can continue to absorb moisture but the layers are usually set before pouring new layers.

Discussion of Draft Recommendation: "Liquid Waste Revision 20"

Nina Spinelli, CAB Vice-Chair, read the draft into the record. The recommendation was considered ready for vote on Day 2.

Nuclear Materials Committee Update: Larry Powell, Chair

Mr. Powell welcomed everyone to the meeting and introduced the committee members. Recommendation 334 and 337 remained open.

PUBLIC COMMENTS SESSION

Tom Clements, SRS Watch commented on the MOX project and its cost. He also noted that Secretary Moniz stated that the project was impossible even if it receives more funding.

END OF DAY 1, September 26, 2016

Meeting Minutes

Savannah River Site Citizens Advisory Board (CAB)—Full Board Meeting

Hilton Garden Inn, Augusta, GA

September 27, 2016

Tuesday, September 27, 2016 Attendance:

<u>CAB</u>	<u>DOE/Contractors/Other</u>	<u>Agency Liaisons</u>
Gil Allensworth	Zach Todd, DOE-SR	Trey Reed, SCDHEC
Tom Barnes	Patrick McGuire, DOE-SR	Sandra Snyder, SCDHEC
Louie Chavis	Jean Ridley, DOE-SR	Shelly Wilson, SCDHEC
Susan Corbett	Thomas Johnson, DOE-SR	Susan Fulmer, SCDHEC
Robert Doerr	Jack Craig, DOE-SR	Heather Cathcart, SCDHEC
Dawn Gillas	Maxcine Maxted, DOE-SR	Barty Simonton, GADNR
David Hoel	Terry Spears, DOE-SR	<u>Stakeholders</u>
Eleanor Hopson	Kent Rosenberger, SRR	Annie Laura Howard Stevens, GA
Virginia Jones	Richard Edwards, SRR	WAND
Daniel Kaminski	Kim Cauthen, SRNS	Tom Clements, SRS Watch
Jim Lyon	Mark Schmitz, SRNS	Rose Hayes, Public
John McMichael	Ron Oprea, SRNS	Ken Liftin, Public
Clint Nangle – <i>Absent</i>	Chelsea Gitzen, Time Solutions	Tom Hallman, Public
Cathy Patterson	James Tanner, Time Solutions	Shandra Drayton, Public
Larry Powell	Federica Staton, Time Solutions	John Oakaund, Public
Bill Rhoten – <i>Absent</i>		Dara Glass, BWXT
Earl Sheppard- <i>Absent</i>		Willie Tomlin, Public
Harold Simon - <i>Absent</i>		Thomas Gardener, <i>Aiken</i>
George Snyder		<i>Standard</i>
Nina Spinelli		Nancy Bobbitt, US Sen. Isakson

Ed Sturcken

Louis Walters

Mary Weber

Opening Ceremonies: Nina Spinelli, CAB Vice-Chair

Ms. Spinelli welcomed the attendees and led everyone in the Pledge of Allegiance and the National Anthem. Ms. Spinelli introduced Dave Borack from DOE Headquarters.

Meeting Rules and Agenda Review: Sonya Goines, DOE-SR Facilitator
Ms. Goines reviewed the meeting rules and agenda.

Agency Updates

Department of Energy Agency Update: Jack Craig, DOE-SR

Last month, Engineering News-Record (ENR) Southeast announced their annual Best Projects Award winners, which included 38 projects for outstanding construction and design. This year they included as part of its Best Projects competition—the Excellence in Safety Award. The Salt Waste Processing Facility project was this year’s winner. Over the course of that construction period, the Parsons logged an estimated 12.5 million man hours and achieved an OSHA Recordable Incident Rate of 0.96, and a lost-time accident rate of 0.24. Congratulations to Parsons and the SWPF team.

SRNS Contract Extended

In August, DOE-SR exercised an option to extend the term of the current management and operating contract with Savannah River Nuclear Solutions (SRNS) for an additional 22 months, from Oct. 1, 2016 to July 31, 2018. Execution of the contract extension ensures uninterrupted management and operation of the work defined in the contract. The requirement covered by the option fulfills the government's existing need. The missions of the DOE’s Office of Environmental Management (EM) and the National Nuclear Security Administration (NNSA) must be continued to complete nuclear cleanup, achieve long-term nuclear management, and support nuclear weapons stockpile and nonproliferation requirements.

The original contract was awarded Jan. 10, 2008. The estimated cost of the base contract is \$4 billion; a total of \$8 billion for the overall cost including the extension to July 2018 (excluding ARRA).

Savannah River National Laboratory

On Oct. 1, SRNL will begin operating as a separate business unit within the existing SRS management and operating (M&O) contract, enhancing the independence of the laboratory and its ability to maintain a strategic relationship with its EM sponsor.

SRNL is unique among the network of DOE National Laboratories in that it is contained within the larger Savannah River Nuclear Solutions (SRNS) M&O contract for SRS. That relationship will continue for the remainder of the SRNS contract, with the changes enabling SRNL to implement business and management processes that are specifically aligned with the mission needs of the lab and its diversified client base.

SRNL Facility now has a more powerful Neutron-Generation system. An unused section of the laboratory has been cleaned out, renovated, and is now the home for the lab’s new thermal

neutron source. The new system offers more than three times the power than the previous system, which utilized a californium source. The new system offers a state of the art research platform in support of continuing analysis for corrosion control; support to the NNSA's tritium mission; and the site's radiochemistry program.

Contract Rebids

Proposals have been submitted on the new Liquid Waste Contract and are under DOE review. A new contract will be award in spring 2017.

An integrated project team has been form to start the rebid process for the SRS management and operations contract.

Assessment of Two SRS Waste Facilities

A DOE assessment of waste disposal practices at the SRS concluded that radiation doses are being maintained within appropriate limits and should not pose threats to the public or facility personnel. The Energy Department's Office of Enterprise Assessments (EA) conducted the evaluation in February and March and released its findings this month.

Two of the site's waste facilities were evaluated: the Saltstone Disposal Facility and the E Area Low-Level Waste Facility. The assessment states that SRS has a strong environmental monitoring program at the SDF. At the E Area facility, SRS maximizes its disposal capabilities by using computerized waste information and tracking system to increase the available space availability for storage. The waste management documents for both facilities appropriately outlined the plans, procedures, and requirements under which the facilities must be operated. DOE also identified some opportunities for improvements.

Tropical Storm Hermine

The site experienced high winds and heavy rain on September 2 as a result of Tropical Storm Hermine. As a result of the storm, several buildings experienced flooding, and roads were blocked with fallen trees. No power outages were noted. The site had prepared for the storm by positioning personnel in 4 areas to better respond to any emergency. Site utilities removed 38 trees from the roadways, including 3 on Hwy 125, and debris from drain inlets and sandbagged several building entrances to limit damage from water intrusion. As you know, we closed the site and only essential personnel reported that day.

Tank Closure

Preparations continue to begin removal of sludge waste out of Tank 15. The first step is to transfer liquid from Tank 13 into Tank 15 so that the sludge may be mixed and readied for transfer out. The transfer of liquid from Tank 13 began on Monday, September 19th, and was suspended shortly thereafter because a minor amount of liquid was observed dripping back into the tank [*For Reviewers: one droplet every 2 – 3 seconds*]. Corrective maintenance on the transfer line will be completed during the next few weeks. The affected portion of transfer line is located within a riser on Tank 13.

Tank Closure Cesium Removal

SRR has selected the commercial supplier Westinghouse Electric Company, LLC, headquartered in Cranberry Township, Pa., and awarded a contract valued at \$12.4 million to demonstrate removal of the cesium component of salt waste through an ion exchange process with an "at-tank" deployment.

Defense Waste Processing Facility (DWPF)

Defense Waste Processing Facility (DWPF) is operating. For this Fiscal Year – DWPF has poured and leak tested 133 (as of 9/20) canisters so far for a total of 4,103 canisters.

Crossbars have been removed in 248 canister storage locations in Glass Waste Storage Building 1 as part of the Canister Double-Stacking effort, and 150 locations have been completed. The first two radioactive canisters were double stacked on August 25. Double-stacking canisters in existing Glass Waste Storage Building 1 will increase storage capacity from 2,254 slots to 4,508 slots, continuing safe interim storage while creating adequate canister storage through Fiscal Year 2029.

Saltstone Processing Facility

Saltstone is in a planned outage scheduled to last until mid-October. The first of two 60,000 gallons salt solution receipt tanks began receiving waste earlier this month. The other SSRT is not needed until SWPF operations begin, scheduled for late 2018. It will be isolated and maintained until it is needed. Both tanks have passed rigorous inspections. For this Fiscal Year – Saltstone processed a total of 1,506,010 gallons of low-level waste into grout.

ARP/MCU

ARP/MCU is in an outage expected to last until late-October 2016 for work scope to include failed pump replacement, coalescer media replacement and system upgrades. ARP/MCU processed a total of 1,129,518 gallons of salt waste this fiscal year.

Saltstone Disposal Unit – 6

Disposal cell construction is complete.

To ensure leak tightness an elastomeric liner is being installed on the inside of the cell. Installation of the liner on the walls is 48% complete. Lining of the floor will start upon completion of the walls. The contractor is scheduled to complete the entire liner installation by late November 2016.

Upon completion of the liner the cell will be filled with water and a hydrostatic test will be conducted. In addition, a non-toxic fluorescent dye will be added to the water used for the hydrostatic test and a black light test will be conducted on the outside of the cell to ensure leak tightness.

Infrastructure to connect the disposal cell to the Saltstone Processing Facility has been completed and is awaiting final tie-in to facility (will occur after SDU-6 passes leak test).

Salt Waste Processing Facility

Salt Waste Processing Facility declared construction 100% complete in April. Testing and commissioning activities at SWPF are about 32 percent complete and operation with radioactive waste is expected to begin by December 2018.

3H Evaporator

The evaporator remains shutdown due to a leak in the evaporator pot. Teams continue work on the path forward, which includes system planning, understanding the failure of the pot, repair options, and procurement and replacement of the pot.

Inspection efforts indicate that the leak is most likely somewhere in the cone section of evaporator pot but is yet to be determined definitively. The insulation removal contract has been awarded to Areva. SRR is currently developing the work package to remove the lagging which is tentatively scheduled to start in November.

Solid Waste Management Facility

For the Fiscal Year (through August) – the facility has disposed of 4,859 cubic meters of Low-Level Waste and 1,093 cubic meters of LLW from Naval Reactor Program. The facility has also shipped 18.6 cubic meters of Mixed LLW offsite.

Effective July 5, 2016, the Carlsbad Field Office has issued Revision 8 of the Transuranic (TRU) Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WIPP) and SRS has been preparing for the recertification of the SRS TRU Waste program. SRS sent personnel to observe the Oak Ridge and Idaho recertification. SRS recertification is scheduled to begin in March

H Canyon

In H-Canyon Spent Nuclear Fuel is being dissolved.

The Target Residue Material (TRM) modifications are operationally complete. The Contractor's Readiness Assessment for TRM was completed early in September. The DOE Readiness Assessment has begun and is expected to complete in early October. A lawsuit has been filed against the Department regarding the TRM shipments from Canada so no further comments can be provided regarding this project.

HB line continues to process plutonium feed material for disposition either through the Mixed Oxide Fuel Fabrication Facility or through Plutonium down-blend.

K-Area Complex

K-Area continues to perform work for ensuring safe storage of plutonium and supports shipment of plutonium to HB-Line for processing.

K-Area completed a Contractor Readiness Assessment for down blending plutonium in September and down blending of plutonium in K-Area is now operational.

L-Area Complex

L-Area continues to support fuel receipts from Foreign and Domestic Research Reactors. L-Area will continue to transfer Spent Nuclear Fuel to H-Canyon as needed.

Building 235-F

235-F continues to address actions for completion of the Implementation Plan for DNFSB Recommendation 2012-1. Outer windows for cells 3-5 were removed in August, and enhanced characterization to determine how much material is contained in these cells was initiated.

German HEU Update

DOE has prepared a draft of the Final Environmental Assessment on Spent Nuclear Fuel from Germany along with responses to all comments received. The document is currently in DOE internal review with no specified date for release at this time.

A-Area Fire Water System

On June 8, 2016, a leak occurred at the base of the 782-A Service/Fire Water Tank. A temporary fix for the approximate one inch hole designed by Engineering was placed by Divers on Wednesday, June 15, 2016. SRNS Engineering is working on a more permanent fix. Execution of the repair is projected for completion by September 30, 2016.

D-Area Ash Project

The D-Area Ash Project began Phase II with clearing and grubbing of 488-1D Coal Ash Basin and dewatering of the 489-D Coal Pile Runoff Basin in August 2016. The project declared Mechanical Completion for 488-4D Coal Ash Landfill on August 31, 2016.

Q&A Session

Bob Doerr, CAB Member: It is my understanding that SRNL operates under the EM budget, will that mean that appropriations for SRNL will change?

Jack Craig, DOE-SR, responded that the majority of the funding for the lab operations does come through the EM program but the laboratory itself, over the last 5 years, has branched out to perform work that is non EM work. He has heard that about 60% of the total lab work is non EM work. SRNL has consumers outside of DOE and the non EM work is paid for by those consumers.

David Hoel, CAB Member: Can you say if there were any environmental or DOE order violations on non-compliances in the past two months?

Jack Craig, DOE-SR, stated that he is unaware of any.

David Hoel, CAB Member: Would you comment on the status of your negotiations with DHEC concerning the missed milestones for the startup of SWPF?

Jack Craig, DOE-SR, responded that the latest draft that they have received from the state was in July and they are currently evaluating it. They hope to get a response back to the state soon. Nothing is finalized yet but progress is being made. In addition to the negotiations, DOE is moving forward with some of the actions contemplated in the draft.

Mr. Hoel: Can you also comment on the status of the dispute resolution process going on with the EPA and DHEC concerning FFA milestones?

Jack Craig, DOE-SR replied that it is still in the informal stage and they are continuing those discussions.

Mr. Hoel: Concerning the assessment of two SRS waste facilities, can you elaborate on the opportunities DOE identified for improvement?

Jack Craig, DOE-SR stated that he didn't have the specifics on the topic but when most assessments are done DOE issues things called findings and opportunities for improvement. A finding is a more significant deficiency; an area for improvement is not as serious of an incident it is essentially something like a better practice that we can implement that we are not currently doing.

Mr. Hoel: Can I infer that there were no findings?

Jack Craig, DOE-SR said that he didn't believe so but he will get Mr. Hoel a final report.

Louis Walters, CAB Member: Can you indicate who the plaintiff is regarding the lawsuit and is the case in U.S. or Canadian court?

Jack Craig, DOE-SR replied that there were multiple entities that brought forth the lawsuit and at this time he did not know all of the multiple entities but there were several of them but it is public information.

Mr. Walters: Is the injunction through Canadian or U.S. court?

Jack Craig, DOE-SR, responded that he will get Mr. Walters that information.

Environmental Protection Agency Update: Rob Pope, EPA

Mr. Pope reviewed that last month EPA hosted a workshop with DOE and the state, they invited SRS, Oak Ridge and Paducah. They are engaged in numerous informal disputes and there is a general goal with EPA to improve the working relationship with DOE. It was a kickoff workshop with sites presenting their priorities, missions and their challenges. Presentations by the state and EPA included site managers speaking on their priorities and challenges. General discussion has continued to improve relationships and work processes. They are planning to hold more in the future SRS maybe hosting one in January year hope to reduce the number of disputes and resolve things without disputes when disagreement arises. EPA is pleased about the Coal Ash Project moving forward. Public outreach activity in Shell Bluff community is continuing. EPA is communicating with SREL, Shell Bluff community and Georgia WAND to enhance and keep going. The EPA plans to assist with outreach efforts engaging with community to assist with community needs. The EPA is also engaging with DOE regarding the Pollinator Project. The project aims to plant species that promote pollinators at hazardous waste sites with lots of space and little public intervention. The EPA is still in an informal dispute resolution process regarding the tanks. The deadline for the tanks to be emptied is drawing near and it is obvious that DOE will not meet the milestone of emptying two tanks by September 30, 2016. They asked for an extension but both agencies denied that decision. The EPA is gathering information from DOE on specific topics associated with the delay. DOE is working with EPA and providing responses. Mr. Pope commended DOE for immediately contacting the EPA and SCDHEC when they encountered a leak.

Q&A Session

David Hoel, CAB Member: Rob you mentioned the tank 15 leak, I am a little fuzzy on exactly where this leak occurred and how much occurred, whether the leak got to environment. Could you elaborate please?

Rob Pope: I am going to defer to DOE since it is their tank and their leak

Jack Craig, DOE-SR: The actual tank did not leak the transfer of materials from the tank at a hose connection.

Jean Ridley, DOE-SR: We were transferring material from tank 13 into tank 15. It wasn't a leak it was a drip in tank 13 between the coupling that connects the hose to the core pipe. That was inside the riser inside tank 13. It was about 1-2 drops every second. When that was identified they stopped work to determine the cause because they weren't sure if it was in the coupling or in the core pipe.

David Hoel: So nothing got into the environment.

Ms. Ridley: Correct. It all dripped back into the tank.

South Carolina Department of Health and Environmental Control Agency Update:
Susan Fulmer, SCDHEC

The Department acknowledged their appreciation to DOE and EPA for continuing to work on a solution to deal with that water that needed to be removed from the north area basin to continue the project. The solution entails that a one-time permitted treatment of the water to discharge and water the cap on the 488 landfill. The H-Tank farm interim record of decision for

tank 16 has been signed. Earlier in the year, SCDHEC received a notification from DOE on ECODS C-1 regarding a land use violation. DOE provided a response that identified some areas for improvement over the site use program. Trey Reed added that SCDHEC has been participating in national and regional dialogue between the environmental council of states, DOE, EPA and states that host DOE facilities. The discussions are aimed to educate and bring all participants knowledge and future discussions may focus on areas of common interest for improvement between DOE, EPA and the states.

Q&A Session

David Hoel, CAB Member: Could you comment on DHEC's opinion in regard to progress/negotiations between DOE and DHEC concerning the missed milestone for the startup of SWPF and I would also like your opinion on progress of negotiations concerning dispute resolutions as well.

Susan Fulmer: We are in ongoing discussion on the missed milestones and we appreciate the information exchange between DOE EPA and DHEC. We did have an informal dispute resolution meeting and we do have another meeting scheduled for October. Quite a lot of information they have provided us to look over in that time period and we are reviewing that. The State's opinion on this milestone is that it is not simply just this milestone that we need to be discussing. Missing this milestone means we miss a milestone next year being able to close tanks. Removing wastes leads into closing and grouting a tank. We would like to be able to discuss the whole liquid waste schedule the state has been very straight forward about their opinion on that. We're still in the initial discussion about specifically involved in the tank that they are removing waste from. We haven't really gotten into the broader discussion yet but that is certainly one of the objectives. Regarding the SWPF missed milestone, I am personally not involved in those discussions. I understand that we have been waiting on a response from DOE. It is the states hope that we can resolve that issue and the other tank issues in one process.

Georgia Department of Natural Resources Agency Update: Barty Simonton, GADNR
Mr. Simonton stated that Sean Hayes was called away last minute and he will provide answers to anyone with questions.

Q&A Session

There were no questions.

DOE Headquarters Reorganization: Jack Craig, DOE-SR

Mr. Craig described the difference between the previous organization and the current one. The prior headquarters organization positions remain unchanged. The deputy assistant secretaries' positions have been realigned into sub-organizations. Some of the previous activities have been combined under the three organizations. Another significant change is that there is a greater focus on SRNL. Dr. Regalbuto established a policy office that is staffed by a senior executive. Their job is to help the lab identify opportunities where the lab can provide benefit across the program.

Mr. Craig stated that one of the ideas in creation of the organization was to have the organization better support the field offices. Under the EM-3 Field Operations there will be more support rather than oversight. EM-3.1 Safety, Security, and Quality Assurance and EM-3.2 Technology Development are new functions in the organization to help the field focus on technology development. The department requested an increase in FY '17, for the technology

development budget. Having a separate team focus on technology development and needs of the field is a benefit to SR. There wasn't an organization complex wide for helping with engineering issues so a chief engineer box was created.

EM-4, Regulatory and Policy Affairs, is a combination of 3 prior deputy assistant secretaries (mission units) with a greater focus on infrastructure management. EM-4.3 is a new organization/activity that better focuses on intergovernmental and stakeholder engagement.

EM-5, Corporate Services is a combination of 3 previous deputy assistant secretaries. It includes budgeting activities for the EM program, work force management, contract and project management and a communications group to lead external and internal communications.

Jack Craig concluded by stating that in his opinion the focus on the National Lab, technology development and engineering support is a benefit to SR. Stacy Charboneau acting as a COO making sure that the field and our needs are supported is also helpful.

Q&A Session

Bob Doerr, CAB Member: The acronyms after people's titles are those job titles?

Jack Craig: There are. The top 3 boxes (APDAS) they are called associate principal deputy assistant secretaries. The DAS is a deputy assistant secretary a level below the APDAS.

David Hoel, CAB Member: I notice under EM 4.2 waste and materials management that 4.21 is the national transuranic waste program and here at SRS we put a lot of importance on completion of the high level waste program, yet at headquarters there's no office for the national high level waste program.

Jack Craig: I don't know if I have answer for you but the TRU program has two parts 1 is the actual operations of the WIPP facility which is part of the field office operations and the national TRU program, since there are multiple sites across the complex to have TRU waste that needs to go to WIPP, they established a program at headquarters to make sure we are consistently applying waste acceptance criteria processes to make sure there is a consistent expectation requirement across the program for shipment of material to TRU waste. The high level waste program operations are primarily at SR and Hanford but they aren't identical. The waste type is not identical the processes are identical so you don't have a consistent operation among the sites. We do have ,which is not shown on this organization is what they call field office liaisons we have two people at headquarters totally dedicated to expediting and helping SR in all of our issues, but one of the primary things they coordinate is high level waste needs, Richland has one also. We do collaborate when we do have some of our activities, such as, this week we are having a big project review at saltwaste processing. We have people from the Richland office here as a part of that team collaborating with us to do lessons learned. That's just one thing that's a difference between TRU waste and high level waste.

David Hoel: I am a little worried about it. It seems that high level waste has lost its focus at headquarters from what you see on this diagram. The other thing I noticed is that EM 5.3, the communications office under Kristen Ellis, used to have intergovernmental and stakeholder programs including oversight of CAB Activities to some degree that seems to be bifurcated here. Some communications and external affairs are done by 5.3 and others are done by EM 4.3 under regulatory and intergovernmental. Which one has oversight of CAB's?

Jack Craig: I believe it is the 4.3 but I will let Jim talk about that. Jim was just with the group talking about the operations a week ago. Dave Borak from headquarters might be able to also answer that question.

Dave Borak: Yes. We used to be under the communications office. Originally we were under the waste office, and then we were under the communications office now we are back under the waste office. The reasoning is the CAB's across the country are very different from our communications offices. Our communications offices focus on the message they want to get out while our CABs focus on receiving advice from stakeholder involvement. That is a different job than working on communications. We still work fairly closely with the communications office but not directly under them.

Dawn Gillas, CAB Member: Used to be that the field office managers reported directly to EM-1 and now it looks like they report through EM-3, is this going to enhance the ability to get messages up to headquarters that the site needs or not?

Jack Craig: It is different. The field office box did report to Mark Whitney before EM-2. The grey line is only unique to the office of river protection it goes to that box there's a congressional requirement that that office when it was created report directly to EM-2. That's the only reason it is like that. We have talked about this a lot the EM-3 is going to operate more as a COO function to operate headquarters and make it more field centric I believe that will help we still have an open communication with Mark Whitney and Monica anytime we need it so I don't feel like that's a hindrance to us at all.

PUBLIC COMMENTS SESSION

Tom Clements, SRS Watch, thanked the CAB members for their service and stated that he informed stakeholders in Japan about the MOX program and SRS as a whole. He provided information on the MOX cost analysis. German officials have received and have had media coverage on the CAB's position statement regarding German SNF. He also reviewed the grounds on contention concerning the Canadian fuel lawsuit and voiced his concerns relating the lawsuit.

Administrative and Outreach Committee Update: Eleanor Hopson, Chair

Ms. Hopson welcomed all to the meeting and introduced the committee members. She stated that the CAB is always seeking new members. She reminded everyone that the membership job is always in full swing. Membership applications were available on the back table and online at cab.srs.gov. She reminded members to volunteer for the CAB outreach events. The Administrative and Outreach Committee had no presentations.

Facilities Disposition and Site Remediation Committee Update: Tom Barnes, Chair

Mr. Barnes welcomed everyone to the meeting and introduced the committee members. The Committee has no open recommendations or pending recommendations. The next committee meeting will be held Tuesday, October 11, 2016, 4:30-6:20 pm at the DOE Meeting Center. He introduced the presenter, Tracy Williams.

Presentation: NEPA Tracy Williams, DOE-SR

Ms. Williams began her presentation by explaining and defining NEPA. The National Environmental Policy act was signed into law by President Richard Nixon on January 1, 1970.

NEPA was enacted when the nation was having issues with environmental releases consequences to the environment. Industrial and commercial development adds value to the country and they can coexist. Protection of the environment and commercial industrial development doesn't have to be mutually exclusive you can promote both. NEPA requires federal agencies to consider environmental values and impacts in their decision-making process before implementing an action. NEPA also provides opportunities for public review and input and considers alternative actions for all major federal actions. NEPA does not preempt other federal laws.

The regulatory drivers for NEPA begin at the federal level with the Council of Environmental Quality who developed the regulations for implementing NEPA, essentially this is the basic framework of what the agencies need to describe in their procedures. All of the agencies including DOE have these procedures which are published for public review. DOE NEPA Regulations – 10 CFR Part 1021 basically explain how the agency is going to implement the federal standard. The next level is DOE Order 451.1B which discusses who at the site and federal level is responsible for implementing the act. The last level is DOE guidance which discusses interpretation and policy.

There are five steps in the NEPA Process:

1. An agency has a need for an action so it develops a proposal.
2. Determine the appropriate level of NEPA review/Consider the significant risk.
3. Prepare required NEPA documentation
4. Make environmental decision
5. If the agency makes the decision to proceed with the project then the project will be implemented along with any required mitigations and monitoring.

Ms. Williams included a diagram that outlined the steps of the NEPA process in detail. Activities considered categorical exclusions are typically those actions, individually or cumulatively, that do not have the potential for significant environmental impact. Regulations allow the agencies to categorize those actions and publish them. The documents are approved by DOE NEPA Compliance Officer.

The next level of review is the environmental assessment. This document provide a brief analysis to determine the significance of environmental effects and also reviews alternative actions in achieving the agencies objective in comparing the environmental impacts to the proposed actions versus reasonable alternatives. The EA includes an explanation of the purpose and need, description of the alternative actions and an analysis of the environmental impacts. The EA is approved by the DOE site manager.

You would have a Finding of No Significant Impact (FONSI) or you would prepare an Environmental Impact Statement (EIS). The FONSI documents the agencies explanation for concluding that there were no significant impacts projected from the proposed activity. Types of actions considered for an environmental assessment are water treatment facilities greater than 250,000 gallons per day, energy system demonstration projects and large waste packaging and storage facilities not including high level waste activities or spent nuclear fuel activities. This document will be approved by the DOE site manager.

The final highest level of review is the Environmental Impact Statement (EIS). This detailed statement assessing the environmental impacts comparing alternatives, providing rational for preferred alternatives. Impacts that would be assessed are land area water resources, socioeconomic impacts, historical cultural and archeological resources and public health and safety. The document would include some of the same elements as the EA but more

detail. Also included is a mitigation strategy and a response to public and agency comments. The record of decision includes documentation as to why the agency chose their preferred alternative and a discussion of alternatives not considered and why they weren't considered. The EIS is approved by EM-1.

Ms. Williams concluded her presentation by detailing how the public gets involved in the NEPA process. A Notice of Intent is published in the federal register to alert the public that the agency is proceeding with preparation of the impact statement. It discusses the need for the action, considered alternatives, potential environmental impacts and opportunity for the public to participate in the public scoping meeting. A public scoping meeting is an informal meeting that gives the public the opportunity to give input on the scope of the EIS, what environmental impact should be assessed and alternatives that should be considered. A public scoping meeting is fairly informal. The public scoping period is typically a minimum of 30 days, once the public scoping is closed the agency considers those comments and prepares a draft EIS. There is a second scoping period for the draft EIS that generally lasts 45 days. The community has the opportunity to attend a formal public hearing to provide comment to the agency. A court reporter is present at this meeting to record comments. The final EIS issued after the second scoping period and hearing comments are considered. The final EIS includes discussion of alternatives and public comments are addressed. The Record of Decision document (ROD) is then issued. The agency cannot make a decision on the proposed activity during the 30-day waiting period following the EPA Notice of Availability in the Federal Register. The process for environmental assessments includes the opportunity for the affected state and tribes to comment on the assessment. Public comment can also be solicited upon DOE request.

Q&A Session

David Hoel, CAB Member: How many of each type of NEPA document is produced by SRS each year?

Ms. Williams: I will provide that information for you but as far as categorical exclusions there is an estimate about several hundred per year. In the last annual report we had around 200-300 categorical exclusions. In the last year we have had around 2-3 EAs.

David Hoel: Which NEPA document was produced for the Canadian fuel proposal?

Pat McGuire: The target residue material was an environmental assessment. We won't be able to speak on that program because a lawsuit has been filed.

David Hoel: Were all the possible alternatives evaluated in the EA?

Pat McGuire: Per the lawsuit we cannot respond with any comments.

David Hoel: Is the EA final?

Pat McGuire: The EA is final.

David Hoel: Is it on the website?

Ms. Williams: It should be but if not it is also posted on the DOE headquarters NEPA website.

David Hoel: Recently I received the SRS NEPA summary that indicated a supplemental analysis for disposition of MK 18- A targets at SRS. Where were these MK targets previously dispositioned that prompted SRS to do a supplement?

Ms. Williams: Those are currently in storage at the facility.

David Hoel: So what is the supplement about?

Ms. Williams: The supplement looks at a proposed activity to process those.

Mr. Hoel: In a public statement by Carol Johnson, the outgoing president of SRNS, indicated a number of achievements that have been done under her tenure. One of which was completion of the waste solidification building and that alternative uses are occurring for the waste solidification building until it is used for its originally intended purpose, were the alternative uses for the waste solidification building evaluated under a NEPA document?

Ms. Williams: I have only been at the site for less than a year, that document was published prior to my tenure but I can certainly get you an answer.

David Hoel: Can anyone elaborate on what the uses are?

Pat McGuire: It is an NNSA activity so I can't elaborate too much but, it is more of a "what if" scenario before any decision would be made with regard to any of those potential future uses the appropriate NEPA process would be followed but it was more brainstorming uses if anything.

David Hoel: So there is nothing occurring in the building now, it was just a "what if" kind of thing?

Pat McGuire: Yes.

David Hoel: Earlier this year, the CAB went to a lot of discussion on deportation of spent nuclear fuel from a number of different locations including the Republic of Germany. In March, I asked for a family tree or genealogy of the NEPA documentation and interrelationships for the various proposals for importation of spent nuclear fuel at SRS from both domestic locations as well as international. I was lead to believe that would be provided at this meeting, when can I expect to receive that diagram?

Ms. Williams: The document is being finalized and it is now in public release unfortunately, it did not complete the process. I will make sure that you will have it by the end of the week.

David Hoel: Ok. Thank you.

Louis Walters, CAB Member: You began your presentation by indicating that the position is to reach a level of coexistence between the process and the dissemination of the review. Could you be more specific, at what point do we reach coexistence and indicate that there needs to maybe be a shutdown of that process?

Ms. Williams: Speaking from my professional experience, you have to take in the significance of the impact and particularly if the impact does irreversible harm to the environment and cannot be mitigated. The NEPA policy does allow if the significant impacts can be mitigated the agency would mitigate those. The analysis is what is the significance of the impact and can it be mitigated and how. If you have an impact that cannot be mitigated, irreversible impact then that would be an action that you would not take.

Vote on Accepting January, May and July Meeting Minutes

A motion was made to vote to approve the meeting minutes. Motion seconded.
The Motion was carried, and the Minutes were approved.

Vote on Draft Recommendation: "Revision of the Savannah River Site Community Involvement Plan"

A motion was made to vote to approve the draft Recommendation. Motion seconded.

Votes: 19 Yes, 1 No, No Abstention.

The Motion was carried, and the Recommendation was approved.

Vote on Draft Recommendation: "Liquid Waste Revision 20"

A motion was made to vote to approve the draft Recommendation. Motion seconded.

Votes: 19 Yes, 1 No, No Abstention.

The Motion was carried, and the Recommendation was approved.

PUBLIC COMMENT SESSION

Jim Lyon, CAB Member, noted that in his opinion a major problem that the site is facing is budget concerns. Given sufficient funding anyone can do anything but when funding becomes constrained projects dates extend and that opens SRS to criticism. I am worried that with administration changes approaching a 10 year completion program will be placed on hold or extended. He states that he is concerned because without money you will not be able to accomplish projects. He would like to hear more about the budget in the future.

Tom Clements, SRS Watch, spoke on the Canadian NEPA document. He stated that a supplement analysis was prepared for that document. Supplement analyses can be prepared without public comment. He also explained the process behind supplement analysis and gave input.

Nuclear Materials Committee Update: Larry Powell, Chair

Mr. Powell welcomed everyone to the meeting and introduced the committee members. Recommendation 334 and 337 remain open. The next meeting will be held Tuesday, October 4, 4:30-6:20. Mr. Powell then introduced Maxcine Maxted.

L-Basin Update: Maxcine Maxted, DOE-SR

Ms. Maxted gave an update on L-Area operations. Ms. Maxted provided a diagram that depicted the flow path of SRS spent nuclear fuel. She noted that most of the foreign fuel from research reactors comes by boat and domestic fuel comes by truck. Once it enters the site boundary it becomes their fuel and it goes into L Basin for safe storage in bundles. The fuel is transported out of L area through the transfer bay. It is moved to H-Canyon through a 70 ton cask. This is only an onsite cask it only goes between L-Area and to H- Area. Currently, L-Area has the approval to process up to 1,000 bundles of material test reactor fuel and up to 200 HFIR cores. Once it goes into H-Canyon it recycles the uranium. H- Canyon pulls out the uranium, cleans it up and down blends it to less than 5% and it is shipped to a fuel fabricator. The fuel fabricator takes the uranium and places it into fuel form and that is sent to the TVA reactors and it makes electricity for the TVA customers. This helps the environment because now the uranium doesn't have to be mined out of the ground. They only do this process with uranium. Plutonium and the fission products are waste products and they end up in the tank farms and eventually turned into glass and sent to a federal repository.

L- Basin is an underwater facility with approximately 3.4 million gallons of water. The water is used for radiation protection for the workers at L-Basin not for a cooling process; the

fuel doesn't need to be cooled. There are 3,650 slots for fuel bundles. L-Basin is a reinforced concrete facility. SRNL conducted a study to review the longevity of the building and concluded in 2011, that the facility could last more than 50 years contingent upon maintenance and assessments.

L-Basin currently has 3,036 bundles of fuel. The HFIR cores are stored separately and the 120 capacity racks are filled. They intend to have one of the dissolvers switched over with an insert to allow the HFIR cores to be dissolved. This will allow the process of retrieving the HFIR cores from the office of science in Oak Ridge to begin. Fuel that has failed (breached, cut etc) is stored in isolation cans. Isolation cans prevents the water inside the can from interacting with the water in the basin.

The receipt cask handling process in L-Area begins with the cask coming through the transfer bay. The crane picks the cask up and places it in water and the lid is removed. The fuel is identified and the fuel goes into a bucket for transfer to the basin.

L-Area has received 9 FRR casks and 4 DRR casks so far this year. Spent nuclear fuel was pre-shipped to H-Canyon for processing and they will continue to store the spent fuel and heavy water.

Ms. Maxted also presented the framework of the transportation safety regulations associated with the transportation of spent nuclear fuel. Transportation of SNF is governed by the Department of Transportation and the Nuclear Regulatory Commission (NRC). DOE is allowed to do their own certification of casks for their activities. All of the foreign fuel receipts are done under NRC certification they are not done under the DOE certifications. The type casks are put in place to ensure that if anything happens the material is going to stay inside the cask. The test conditions attest to that. The Cask test conditions include: heat (100 °f plus insulation), cold (-40 °f), increased external pressure (20 lbf/in²), decreased external pressure (3.5 lbf/in²), vibration water spray, free drop compression and penetration. Hypothetical accident conditions are also tested and are tremendously hard to pass. They include: a 30 foot drop onto a flat, unyielding surface so that the package's weakest point is struck, a 1100 lb. mass dropped from 30 ft. onto package placed on unyielding horizontal surface, a 40 inch free drop onto a 6 inch diameter steel rod at least 8 inches long, striking the package at its most vulnerable spot, thermal exposure of the entire package to a 1,475 °f fire for 30 minutes. All tests are done to the same package in the above order. A new or untested package is allowed to be used for the immersion test. During immersion, the package is immersed under 50 feet of water for at least 8 hours. Ms. Maxted provided videos of the testing and they can be found here https://www.youtube.com/watch?v=YCk_UZEjpnY <https://www.youtube.com/watch?v=U1nvRBk4W3o> .

The disposition options for SNF include processing in H-Canyon and Dry Storage. H-Canyon is a perfect option because the fuel is aluminum clad. The uranium can be reused and the fission products and plutonium can be placed in the waste tanks and turned into a glass form. The Amended Record of Decision (AROD) allowed the processing up to 1000 bundles and 200 High Flux Isotope Cores, 120 bundles to be shipped to H-Canyon. The amount of what can be shipped and processed is dependent upon the funding amounts received. There are some

technical issues concerning dry storage of SNF. The questions that have been raised are associated with how long to dry and how dry is dry for aluminum clad fuel.

Q&A Session

Bob Doerr, CAB Member: While in transport who is responsible for security and safety?

Ms. Maxted: The shipper of record is responsible, the truck driver and the receiver.

Bob Doerr: You referenced the DOT and the NRC as the ones responsible for the shipment itself. EM is not responsible until it is successfully received.

Ms. Maxted: They are responsible for certifying the package for use. You can't use a package until they have a certificate of compliance issued. Once you use that package then the shipper and you are responsible; not the NRC or the DOT. They are aware of the shipment but they are not responsible.

Bob Doerr: Is there something about the shipment process that the CAB can hear a presentation on?

Ms. Maxted: I can ask NNSA.

Dawn Gillas, CAB Member: It looks like you're going to process through 2024 then not process anymore

Ms. Maxted: We do not have a decision to go past the 200 HFIR cores. We would need an additional NEPA document and a department decision to go past those 200 HFIR cores.

Ms. Gillas: Is that the plan to go for that because otherwise you are going to end up in the L-Basin forever or dry storage.

Ms. Maxted: 2023-2024. The department is waiting to see how well we are doing with processing before they move forward with anymore decisions regarding processing.

Larry Powell, CAB Member: How do you decide which bundles are taken to H-Canyon?

Ms. Maxted: We are an integrated team between H-Canyon and L-Area. L-Area doesn't make the decisions, H-Canyon does. The process they are using tries to keep the average content of uranium in the basin the same. What they are pulling out is an average of amount of content. They are trying to maintain that average and get out the amount that they need. It is more beneficial to the TVA facility to have a steady flow of uranium.

Larry Powell: What is the oldest bundle in the L-Basin?

Ms. Maxted: We do have some fuel from the 50s.

David Hoel, CAB Member: Of those receipts in the out-year's beyond 2023 how many of those receipts are from foreign research reactors?

Ms. Maxted: The foreign research reactor program ends May 12 of 2019. There is an extension for Japan because of the Fukushima accident which will take them to 2029. The most of the fuel

in outyears past 2019 is our domestic receipts from our research reactors around the country like MERR, MIT, and MIST.

David Hoel: I read in the newspaper recently that NNSA is actually considering sending highly enriched uranium to the Netherlands even though there was a policy to convert everything to low enriched uranium reactors for research but how does that figure into potential receipts for the future?

Ms. Maxted: I do not know the impact of that but I believe the HU you are talking about is for Moly-99 production and depending on the Moly -99 targets it may not be acceptable for us to bring it here we may have to make a disposition path for it, I do not know the answer. I do not think that has been fully vetted all the way of what they are going to do with that in the long term.

David Hoel: Is there going to be a NEPA review for that proposal?

Ms. Maxted: I do not know.

Susan Corbett, CAB Member: I didn't see any modeling for a terrorist hijacking. Is that not a possibility in today's world?

Ms. Maxted: No. It is a possibility that's why you will not hear us talk about our shipments prior to the actual receipt. It is safeguarded information. There are things put in place to try and prevent those.

Susan Corbett: Is there a plan in place?

Ms. Maxted: There are security plans.

Susan Corbett: I'm assuming that none of these tests involved fuel, assuming that these casks are filled with spent fuel what happens to the fuel? The cask itself maybe fine but the fuel that arrives gets slammed around. What happens then? Is there a criticality possibility here with broken and spilling fuel? Has that been modeled?

Ms. Maxted: Yes the criticality has been modeled. They may break inside of their baskets but typically, I know you have seen pictures of the 9975 for the Pu shipment and you can see that they are inside those drums, there are two little cans usually, similar for the casks there's a bunch of shielding around them and there in the basket so they could become brittle and broken so those baskets would be removed and those casks would be deconned and that basket would have to be handled before you can receive your certificate from the NRC they do a criticality analysis to ensure

Susan Corbett: I am assuming that after an accident, fuel becomes broken up, does that pose other amounts of radiation coming off of the cask itself, is there any gamma radiation coming through at that point if the fuel rods are broken up and exposed

Ms. Maxted: No they have already done the fuel accounts for the worst possible scenario. They don't model it as a fuel rod; it usually gets modeled as the sludge at the bottom of the cask so the worst case condition is what they use to model.

Rob Pope, EPA: Could you give me an estimate of what volume of liquid waste you would be adding to the tank system by processing 1,000 bundles and 200 HFIRs?

Ms. Maxted: I need to verify this but I believe it is less than 100 canisters of glass that would be generated. I don't know the actual gallons, I know that we are limited to this year is probably 200,000 gallons that can go to the tank farms next year I think it goes up to 300,000 per year and it stays at that until we have to start going down when they go down.

Public Comment Session

There were no comments.

Waste Management Committee Update: Virginia Jones, Vice Chair
Ms. Jones welcomed everyone to the meeting and introduced the committee members. The committee has one pending recommendation. The next meeting will be held Tuesday October 4, 6:30-8:20 pm at the DOE Meeting Center. Ms. Jones then introduced Roberto Gonzalez.

DWPF Update: Roberto Gonzalez, DOE-SR

Mr. Gonzalez provided an update on DWPF including a progress update and insight on the double stacking project. He began his presentation by providing a depiction of the flow of material and tanks throughout the liquid waste program. The DWPF program is an integrated system, everything is intertwined. In the vitrification process, the sludge from the tank farm comes through the low palm pit transfer lines to the chemical cell then goes into the sludge receiver and adjustment tanks and the sludge mixed operator tanks. Once the material is qualified it is sent to the melter tank that pours into the canister. A temporary plug is applied and then the material is transferred to the decontamination chamber. Once it is decontaminated an additional plug is applied and it is leak tested. It is moved with the shielded canister transport into the glass waste storage building. In regards to production, this year DWPF has projected completing 125-150 canisters. As of September 26, 2016, they have leak tested 135 canisters. So far 4,106 canisters of an 8,170 campaign have been produced. In May, Mrs. Monica Regabulta joined DWPF in celebrating the completion of 4,000 canisters. She helped move canister 4,000 into glasswaste storage facility 2.

The program acknowledges that more storage is needed as more canisters are produced. Two facilities have been erected and they are in the process of filling them. The option of constructing another facility was costly; as a result, the program began to search for cost saving alternatives and created the double stacking process. The configurations of glass storage building #1 and were altered. The canister plugs and dimensions were also altered to allow the cans to be double stacked. SRS Liquid Waste System Plan, revision 20, approved on March 21, 2016, determined that additional storage of space of vitrified canisters is not needed until 2029 due to glass storage building #1 double stacking initiative. To process all of the material they will need approximately over 8,000 canisters so another building is essential to store more canisters.

The canister storage process was adjusted to handle the double stacking method. The cross bar that supported the canister was removed and the lower canister is supported on the vault floor. This allows more space to be utilized while the canister height still remains below vault grade. The upper canister is placed directly on top of the lower canister. The Upper canister extends into the operating deck floor, but remains below vault grade. The new design of the plug is roughly half the size of the originally plug.

SRR developed a remote cutting tool capable of removing 1 ½ inch x 3 inch galvanized steel to remove the cross bar. The tool extended approximately 18 feet to reach and remove the cross bar. 262 crossbars have been removed. 150 of 150 positions have been completed. New plates have been procured and new plugs installed. Improvements and modifications to the shielded canister transporter software and hardware have also been completed. In August the

first two canisters were doubled stacked. The heat model for the sludge in the tank farm has been observed while storing the canisters. The heat model calculations were revised and revisited to ensure that heat will not affect the integrity of the canister nor the vault. The seismic and structural calculations were also reevaluated to ensure their applicability. Double stacking does not alter the hazard category of the glass waste storage building. Changes needed in the Documented Safety Analysis (DSA) that allows DWPF to carry out the operation were revised, submitted to DOE, reviewed and have been implemented.

Mr. Gonzalez ended his presentation by stating that the glass waste storage facility has been modified and DWPF continues to complete the facilities' mission.

Q&A Session

Virginia Jones, CAB Member: On slide 8, there is reference that you still need space for approximately 1,306 canisters and there was an implication that you were going to build another facility, so that's beginning to sound like more than interim. What is the pathway out? Don't the canisters get taken to WIPP so that we really wouldn't need additional storage space?

Mr. Gonzalez: As of right now, the final repository has been put on hold, so in the meantime for our program and mission we need to continue storing these canisters onsite. We are making plans to store these canisters here at SR until the final decision is accomplished.

Virginia Jones: So you are saying that there is no pathway out?

Jean Ridley, DOE-SR: The disposition path for high level waste has always been a repository so that pathway has never changed. Roberto was referring to; we have enough space to double stack about 6,000 canisters we think we are going to produce about 8,000. We are going to need additional storage space because repository isn't expected until 2045 and we will finish our campaign way before then so we need to have interim storage of those canisters until such time the repository opens.

Virginia Jones: To clarify, the material is not of the nature to go to WIPP because I understand that WIPP is opening soon.

Jean Ridley, DOE-SR-: That's correct.

Virginia Jones: Is it possible that SWPF will be ready before 2018?

Jean Ridley, DOE-SR: Neither Roberto or I can speak to SWPF, I just know what they have said. Right now the date is December 2018. I believe that is their early start date if it comes in sooner than that, it will be great.

David Hoel, CAB Member: I would like to know who first came up with this double stacking idea.

Mr. Gonzalez: There were several people who were thinking about this concept. There isn't a single person who you can attribute to this success, however there is one person on site who has been there for 40 years who is very knowledgeable with what is going on and that is John Owen. He is one of the best assets that we have on site and he is involved in everything that we do regards to the double stacking.

David Hoel: Too bad they didn't put in a suggestion to receive some sort of award because it is absolutely brilliant, saved us a ton of money and put off new construction for a very long time.

Dan Kaminski, CAB Member: I know we have the new melter in stock ready for replacement at some point are we going after a planned switch out or going to attempt to run the current melter to failure?

Mr. Gonzalez: We had a number of engineers who took the initiative to look at the health system which allows them to assess the outward infrastructure. In regard to the melter, they recommended based on the history of the first melter and the failure mechanism to occur at that time that the melter that we currently have is still in good shape. The components around that support the melter are still valuable and working perfectly. They made a recommendation to the DOE to extend the life to replace it two years from now. That recommendation has been accepted and we are using the system plan to incorporate those changes.

Dan Kaminski: Some of those changes in the second melter were there some replaceable components where the wear items were?

Mr. Gonzalez: There are some improvements that can be done and they are being incorporated into the new design. The components around that have actually failed have been reengineered and incorporated into the design. Software and hardware has been replaced as well.

Susan Corbett, CAB Member: If the MOX program does not come into (?) will the plutonium that was schedule to go into that program go into this program?

Pat McGuire, DOE-SR: No it will not. We will not disposition all of the plutonium we have through the liquid waste process. Right now it's as you say MOX or WIPP so those are our two disposition paths.

Susan Corbett: So it will go to WIPP?

Pat McGuire: I am not going to pre-judge what the environmental action would say; all I can say is the current one has 6 tons that is currently going to be dispositioned to WIPP.

Mercury in the Liquid Waste System: Richard Edwards, SRR

The mercury program team has been engaged by a number of organizations representatives from SRR. SRNL and DOE have been represented on the team. Mercury in the liquid waste system must be removed and disposed. The mercury originated from processing from nuclear waste years ago and went into the tank farm system our high level liquid waste system. There is approximately 60 metric tons of mercury in the high level waste system. If you have 60 metric tons of mercury you have to have somewhere for that to go so essentially we take a gallon of mercury out a week for the next 20 years which is equivalent to a 55 gallon drum of mercury every year for 20 years. DWPF was designed for mercury removal but that system is currently not functioning due to chemistry and equipment issues. It originally did function but there were some changes in 2008 that caused it not to function. In 2008, mercury wasn't going to the location where SRR collected mercury it was going to another collection spot and what was going to the originally designed collection spot was dirty. The equipment to process it couldn't process it. The changes that precipitated some of the mercury program team's action was that they started to see an increase in concentration of mercury in salt waste processing. Organic mercury was beginning to be seen and the team had to understand how they would manage organic mercury compounds. The compounds were analyzed in terms of the saltstone

product and industrial hygiene and worker protection. The magnitude of the observed change was small but it was a rare compound compared to others that SRR has worked with. Immediately, industrial hygiene and worker protection was addressed, worker communications were established and a gap analysis was performed. The gap analysis was used to determine if the latex gloves used by workers were permeable to methylmercury and it confirmed that the gloves were capable of protection from organic mercury.

SRR routinely checks the air for mercury vapors. Six instruments are used to detect extremely low concentrations of mercury in the air. The thresholds for worker protection are below the 8 hour threshold limit of continuous exposure for mercury. The goal of the mercury program team is to create a long term action or management plan for mercury. The plan was approached in two phases. During phase 1, high level liquid waste systems were reviewed to define what the team knew about mercury in each system; where do they have gaps and how do they close these gaps. Phase 2 involved an extensive sampling and mercury speciation effort, engineering evaluation of DWPF mercury removal systems and alternate liquid waste mercury removal systems, overall systems reviews of DWPF, salt processing and evaporators. The results were published in the comprehensive action plan which has been approved and currently being reviewed by senior management to be sent to DOE headquarters. An expert advisory panel was established to ensure that all problems and solutions were anticipated. A mercury issued coordination team was also established with UCOR in Oak Ridge. This created a valuable exchange in ideas associated with integrating mercury related efforts between SR and Oak Ridge. The mercury team is also integrated with DOE EM-1 which is an ongoing mercury technology plan throughout DOE.

Formerly in DWPF, the mercury was not being transmitted to its correct vessel and the mix that was going to the vessel could not be processed. The proposed plan was to remove the mix from the vessel and restore the capability to remove it. Mr. Edwards stated that in theory it sounds simple but in practice it is far from that. The remote canyon environment requires the configuration of the facility to be changed to enable them to change the design, refurbish pumps and alter the process. DWPF created a project team to carry out the proposed plan. The activities have been underway since the start of calendar year 2016 with a goal of being deployed in calendar year 2017. The alternative mercury removal locations and system engineering evaluation locations plans (essentially standby plans), included scoping the technology to determine if the proposed ideas would work. A number of those activities received funding and have started. Mr. Edwards presented a chart that depicted examples of long term actions in the categories of plant operations, technology development and process monitoring.

Mr. Edwards concluded his presentation by stating that mercury is in the system and needs a place to go. It cannot go to glass, the water stream or saltstone so they have to develop a way to remove the mercury, clean it and dispose of it in an environmentally acceptable way. The DWPF mercury removal system is currently a long term key technology challenge to the DWPF mission. Several technology initiatives for removal of mercury from the liquid waste system have begun.

Q&A Session

Larry Powell, CAB Member: I want to know if the 60 metric tons of mercury you speak of is that organic mercury compound or is that mercury as an element.

Mr. Edwards: It is mercury mostly as an oxide within the sludge. The organic is being formed during our process operations.

Mr. Powell: So when you dispose of this mercury, do you dispose of it as a mercury oxide or as a mercury compound?

Mr. Edwards: We clean it up and dispose of it as elemental mercury. We pull it out of our process as elemental mercury and whatever is being done to acceptably dispose of it is what is being done.

Mr. Powell: Is it radioactively contaminated?

Mr. Edwards: No. It is actually very clean. We pull it off of the evaporators to a small extent; we were pulling it off DWPF until we had problems and it is very clean from a radioactive point of view. There is no market for it but it is clean. At one time we used to actually send it back to H-Canyon and they would use it again.

Mr. Powell: Since it is a clean mercury element is there not a market for it without having to dispose of it. Thermostats and different things that use mercury.

Mr. Edwards: I don't think there is a big market for it. I have never really looked at the market place for mercury but with everything going digital, I don't know who the major consumers of mercury would be.

Mr. Powell: I think they use it a lot in gold mining. It seems to me that it would be better to be concerned with repurposing it so even if you gave it to say a gold mine company, let them reuse it rather than to have them dispose of it.

Mr. Edwards: I agree. That was the original intent with giving it back to H-Canyon was to find a reuse for the material. If there is no reuse then we have a disposal path. Right now, we just want to get it out that's been our total focus.

Dawn Gillas, CAB Member: Pat, isn't the canyon still using mercury in its processes?

Pat McGuire, DOE-SR: Yes we use it as a catalyst to the solution process. We have over the course of years looked at alternatives for mercury but there really were no other alternatives. I think over the years we have used the recycled mercury but we are using significantly less than what they are going to recover. We will partner with SRR but there is so much more than we will ever plan on using.

Mr. Edwards: What they are using today is a drop in a bucket compared to what we have so it is a really small quantity.

David Hoel, CAB Member: On slide four, you have a bullet that says hazardous waste land disposal limit clarified, I am not aware that the landfill at saltstone is a hazardous waste landfill and can you elaborate on what you mean by the disposal limit being clarified?

Mr. Edwards: With respect to the permit we cannot have hazardous waste in the facility that is the context of that meaning. We have to stay away from anything that would characterize it, from a mercury point of view as a hazardous waste. We maintain a control at .025 so our control unit is a factor of 10 away from classifying saltstone grout as a hazardous waste.

Mr. Hoel: So the limit that got clarified is the .02?

Mr. Edwards: Correct. We are controlling to .025.

Susan Corbett, CAB Member: So there really isn't a way to dispose of this stuff all we can do is manage it, right? It doesn't go away it doesn't breakdown all we can do is control it and hope it doesn't get out into the environment, right? Is that what you mean by dispose of?

Mr. Edwards: There are some acceptable forms of mercury like the sulfide form because it is very stable and essentially the mercury won't leach out if it is exposed to water. There are some acceptable forms. We can convert it from elemental and it will be an acceptable form.

Ms. Corbett: Is that what is going to be planned with all this mercury?

Mr. Edwards: That is going to be determined as we start to pull it out we are working on the disposal paths we haven't completely defined that at this time but it will be an acceptable disposal path by definition.

Ms. Corbett: Mercury is part of the reprocessing process it is used as a catalyst so are we bringing in new mercury?

Pat McGuire, DOE-SR: Occasionally we may add clean virgin mercury to our process when it's recovered occasionally we do add more virgin mercury through the catalyst but it is very small compared to the inventory that they have but I understand your point every little drop we have to eventually deal with. To answer your question, yes we do.

Susan Corbett: All reprocessing as we know it requires mercury. I would really beg to differ about giving it to the gold mine companies because I have seen what gold companies leave behind and they often leave mercury in the environment so I would rather have it stay here.

Virginia Jones, CAB Member: You said that you had to send mercury sample off site, so looking at slide 9 you indicate that you have monitored mercury in salt batch qualification samples so does that mean you are testing samples?

Mr. Edwards: As we prepare salt batches and qualify them currently we are sending samples of that material to Washington (state) to characterize it for mercury SRNL has invested in infrastructure to be able to do that themselves without sending it off site. They are currently working on procedure and getting it functional for our purposes that is going to take the better part of this year to get that in-house capability.

Virginia Jones: Does the lab have money to support that?

Mr. Edwards: They have money to buy and purchase the instrument we are working through the next year's budget to see how we can best support that effort. It is in our integrated priority list. We anticipate being able to fund it at this time.

David Hoel: I think it should be something we address in our annual recommendations to DOE concerning budget.

Virginia Jones: The sampling process will continue for years? It's not going to be something that you do for one year and not need to do it anymore. It's an ongoing sampling process that's going to move forward for several years?

Mr. Edwards: That's a part of our routine process. We are just asking that when you analyze for all these other things we are adding mercury to the list. If you are thinking about a recommendation the SWPF laboratory also has capabilities to analyze for organic mercury.

PUBLIC COMMENTS SESSION

Moses Todd, public, commented that the saltwaste project is enabling tank waste processing. He commended the CAB for their work over the last 25 years. He provided detail on his organization and a regulation they recently passed in support of funding nuclear communities. He urged the workers of the MOX project to concentrate on their work even though the project is finished because nuclear work can be dangerous. He stated that he is in support of allocating appropriate funding for the cleanup effort. He closed his remarks by commending the Nuclear Defense Safety Board and National Nuclear Security Administration for their work and efforts.

Annie Laura Howard Stevens, GA WAND, thanked SRS for attending the Shell Bluff community tour.

Strategic and Legacy Management Committee Update: Bob Doerr, Chair

Mr. Doerr welcomed everyone to the meeting and introduced the committee members. The next committee meeting will be held October 11th, 6:30-8:20 pm. He advised everyone to make a note that the meeting location has changed to the DOE Meeting Center. He then introduced the presenter, Terry Michalske.

Savannah River National Laboratory Update: Terry Michalske, SRNL

Dr. Michalske provided an update on the status and direction of SRNL. He emphasized the safety culture of the site and provided a safety record that compared SRNL's focus on safety to other DOE national laboratories. SRNL is the safest laboratory throughout the DOE. The National Lab performs work for an estimate 20 different agencies and offices within the government along with DOE. The National Lab has a set of capabilities and it is their job to utilize these scientific and technical capabilities to provide value to the U.S. government and tax payers.

He reviewed the focus of SRNL is to process and remove legacy waste. Dr. Michalske stated that the Department is making significant progress in completing this mission. They began with 107 legacy sites and now they are down to 16. Another national challenge that the lab focuses on is nuclear weapons. The lab is uniquely responsible for critical aspects of nuclear weapons. Without SRNL, the country would not have a viable nuclear deterrent. The lab is also responsible for helping the U.S. understand nuclear technologies other countries are using. A lot of work at the lab supports DOE's efforts to make sure that no matter where nuclear materials are located throughout the country, they are stored and protected correctly. SRNL works in around 50 countries helping them establish a safe way to manage their materials. Lastly, the lab focuses on cyber security. SRNL is responsible for the database for all of the nuclear materials in the world. SRNL maintains the cyber security for that project. SRNL has developed some approaches that have the opportunity to revolutionize how cyber security is done. The Secretary and Assistant Secretary of Energy believe that the lab plays a critical role in the direction of the U.S. government.

Dr. Michalske believes the future of the lab is reverting back to its original purpose, manufacturing materials. SRS was originally a manufacturing center designed to manufacture materials for the Cold War and now SRS manufactures waste forms that allow legacy materials to be stored safely. The lab's goal is to utilize new manufacturing technologies to support the clean-up program. In order for the lab to take a greater role in these efforts, Dr. Michalske says that the lab needs to be integrated with the community. The new initiative to build a new facility off site will allow the lab to work with universities and industries and share information and be more effective in the clean-up mission. The facility will be located on the campus of USC-Aiken.

The lab has also partnered with advanced manufacturing companies. This partnership improves worker safety and reduces capital and operating costs. SRNL has developed innovative national effort technologies that will support manufacturing security. Dr. Michalske highlighted that SRNL has not lost its focus but they are thinking ahead on how to continue to be an important economic engine for the region He believes SRNL and the region have a very promising future. The lab is moving towards being more engaged in the science and technology outside the site. This shift allows new technology to benefit the site and the region.

SRNL's strategic initiatives include technical leadership for EM cleanup mission, tritium expertise for nuclear deterrents, manufacturing innovation for DOE/NNSA, manufacturing solutions for the nation in partnership with academia and industry, nuclear assessments and forensics improvement. Dr. Michalske stated that manufacturing is going to propel the future of SRNL. Manufacturing will allow the lab to grow in size and impact the education and economic development of the region.

Q&A Session

Bob Doerr, CAB Member: Does SRNL need to be involved in the transportation of the nuclear material?

Terry Michalske: Absolutely, that's how we got involved in cyber security. We are very much involved in that as well as the certification of the packages. We do the physical testing to make sure that the package can withstand an off normal event. The lab is very much involved with setting the standards for the packages and also developing new technologies that would make it even more secure.

David Hoel, CAB Member: The quote from Dr. Regalbutto "EM has lost the process engineering capability it once had." I don't understand that. What do you think she means by that?

Dr. Michalske: I think she means, is that we haven't kept up with where the private sector community has gone in process engineering and this is to say that the industry has developed new approaches and uses different technologies than we have been keeping up with.

David Hoel: You guys are doing fantastic things how can this body help you in furthering those goals?

Dr. Michalske: The site is a very big place it is easy to think that it is just one amorphous thing out there. I think the recognition that there is a science and technology organization that is uniquely identifiable and actually contributes to the success of the mission is an important thing that you can do in terms of relaying that to the community as well as the department itself. I am a firm believer that the lab needs to give back to the community and the best way for us to do that is to be part of the economic developments of the region and that's another place where this

board can help build those connections and help the broader region understand that value and what the lab offers in terms of contributing to that.

Louis Walters, CAB Member: What elements in your collaborations can allow individuals to go into entrepreneurship, hotel industry, and other industries other than manufacturing?

Dr. Michalske: The best thing that we can do is to work with the educational institutions to help develop the kinds of training and real world experience that people will need to have that skill set to be part of that. We are really exciting about the advanced manufacturing collaborative on the university campus. We're going to be across the street from the Ruth Patrick Science center, k-12 students come and are exposed to STEM fields. So far, we have signed agreements with Augusta University, Georgia Tech, Clemson, South Carolina, USC- Aiken to be part of this because we need to develop that training ground where is not just the book learning they can come and work on real problems with us. We are very fortunate in this region to have within driving distance 9 historically black institutions and for three years now, we have been managing the DOE program for the EM side. What we have done is to try and redirect that program so that they became more competitive on an international scale. The students actually learn how to write proposals for the work they are going to do. We require that they are teamed with one of our scientists or scientists at one of the labs around the country by doing this we have quadrupled the number of student interns from those schools which we are very happy to see. Many of them actually come back and work for us in the end. It is self-serving and I am glad to have them come. It has also increased the number of undergraduates going on to top tier programs. The reality is that the skill set is going to be different and whether you are an entrepreneur wanting to start up a new business or you're going to work for GE, these are the skills they are looking for so I think that's the best thing we can do; work together with the education system with the community colleges and universities to help them advance the training of the next generation work force. It is good for us too, because the workforce at the site is looking towards the golf course. Over the next 10 years I will change out almost everyone in the laboratory. We are focused on trying to play an important role there.

Gill Allensworth: When will the USC-Aiken property be finished?

Dr. Michalske: This is what is called an alternatively financed approach. The way it works is that the department said we needed a facility like this. Then comes the question as to how am I going to acquire it. I can acquire it renovation something I already have, building something new or you can do it by working with the private sector. The department decided for this facility that the private investment was the right way to do this. It was partly because we knew that it had to be away from the site in a university environment where students and industry could easily access it. That decision was made just about a year ago. Then there was a process in putting out a proposal to see who would be interested in building this and we had four proposals, two from each side of the river. We had a review process and selected the team led by the Aiken, Litchfield, and Saluda economic development. That is the package that is before the DOE for signoff. Once that is signed it goes into the private sector and their schedule would be to have the building complete in the summer of '18.

Gill Allensworth: So in the summer of '18 the building will be completed and will that portion be up and running? How many employees will be there?

Dr. Michalske: About 100.

Gill Allensworth: These are going to be highly paid scientist correct? So you are bringing 100 people to Aiken County, 100 new jobs, average salary 6 figures that's a pretty exciting thing. I joined the CAB because I look at SRS as a great economic engine for the CSRA and this excites me.

Jack Craig, DOE-SR: I just wanted to clarify what approval might mean. The thing that they have before me to sign is the recognition that we have established a separate business unit at the lab under the M&O contract. That will happen this week and I have that package from Terry. The advanced manufacturing collaborative is running under a separate process. That package has come to us, we have concurred on that package, and it has to go to a separate real estate review at headquarters and I believe there is coordination now on that. That's running a separate track.

Public Comment Session

There were no public comments.

Bob Doerr commented that the CAB tours have had low attendance. He would like to see more members take advantage of the tours.

Dawn Gillas added that she worked at the site for 15 years and she learns something new each time she takes a tour.

Louis Walters commented that he participated in the Shell Bluff tour and the community was very excited with having EPA there. He thanked DOE and EPA officials for attending.

Closing Remarks: Nina Spinelli, CAB Vice Chair

Ms. Spinelli thanked everyone for their active participation in the meeting.

MEETING ADJOURNED September 27, 2016



Re: Comments to Department of energy Savannah River Site Environmental Management site-specific Advisory Board

moses todd to: srscitizensadvisoryboard, bwright150, moses todd

09/15/2016 03:01 PM

Good afternoon I'm Moses Todd a former member of Savannah River Site citizen Advisory Board,(CAB) I've supported the cleanup initiatives at Savannah River Site for 20 years Parsons Infrastructure is finishing The Salt Project and doing startup as we speak this will enable the processing of high-level, and low-level nuclear waste from the tank farm and canyons. I support the Department of energy non nuclear proliferation mission at the Savannah River Site, call on the Obama administration and Congress to fully fund the MOX FFF project Savannah River Site, we are a Nuclear Community that's vigorously supported the Savannah River Site's missions. May I take this time to thank the Environmental Management site specific Advisory Board for their work on behalf of the Savannah River Site, The Defence Nuclear Safety Board,and The National Nuclear security Administration for oversight at the Savannah River Site.

Sincerely
Moses Todd



High level nuclear waste for Savannah River Site --Just say NO!

Kathryn Luchok to: srsCitizensAdvisoryBoard@srs.gov

09/27/2016 05:20 PM

Please respond to Kathryn Luchok

Dear Board,

As a public health professional and concerned citizen, I was shocked and alarmed that SC is considering taking high level international nuclear waste for long term storage at the Savannah River Site. We already have seen a poor track record in storing waste and have more than our fair share of such waste in SC. Please do not let more into our state. How are we even going to manage the lower level waste generated once SCE&G finally gets their wildly overpriced and outdated nuclear power plants up and running?

We currently do not have the technologies in place to safely manage and store nuclear waste. Why would we want to bring more in? Let these countries handle the waste they generate. Nuclear power is too costly and too dangerous to be a good bet for our energy needs. And we certainly do not need to increase our role as a dumping ground for nuclear waste.

I emphatically urge you to just say NO to this proposal and also to look for ways to divest our state of existing nuclear waste.

Kathryn Luchok, PhD

[REDACTED]

Columbia, SC 29205

[REDACTED]