

Summary Notes–August 9, 2016  
Savannah River Site (SRS) Citizens Advisory Board (CAB)  
Nuclear Materials (NM) Committee

The FD&SR Committee held a meeting on Tuesday, August 9, 2015, from 4:30-6:20 p.m., at the New Ellenton Community Center in New Ellenton, South Carolina. It was also streamed online and posted to the CAB's website and YouTube page. The purpose of this meeting was to receive a presentation about expressing concentrations. There was also time set aside for committee discussion and public comments.

Attendees:

CAB:

Larry Powell, NM Chair  
Dawn Gillas, NM Vice Chair  
Nina Spinelli, CAB Vice Chair  
Earl Sheppard  
David Hoel  
Daniel Kaminski  
Mary Weber

DOE/Contractors/Others:

Kim Cauthen, SRNS  
Patrick McGuire, DOE  
Tony Polk, DOE  
Bill Brizer, Retired  
Tom Coleman, AREVA  
Maxcine Maxted, DOE  
Melissa Johnson, Time Solutions  
Rick Taylor, Time Solutions  
Thomas Gardinr, Aiken Standard

Welcome and Introduction:

NM chair Larry Powell welcomed everyone, and stated the meeting was being streamed online. He asked Jim Giusti, DOE-SR, to introduce new members. Mr. Giusti announced that James Tanner, Time Solutions, had been hired as the new CAB administrator and introduced Monte Volk, DOE-SR, and Sonya Goines, DOE-SR, who he stated will be assisting as facilitators for CAB committee meetings and full board meetings. NM chair Powell introduced Maxcine Maxted, DOE-SR, and allowed her to begin the scheduled presentation.

Presentation: Point of Contact Status Update – Maxcine Maxted, DOE-SR

Ms. Maxted began her u stating that in H-Canyon, both the contractor's and DOE's readiness assessment for first Uranium cycle and head-in operations have been completed. Dissolution of spent nuclear fuel is expected to begin in August. The contractor's readiness assessment for the Canadian target residue material began the Tuesday prior (August 2<sup>nd</sup>). A portion of the DOE readiness assessment is being performed in parallel with that contractor's readiness assessment for those activities that involve the LWT casks. The remaining portion of the DOE readiness assessment is scheduled to begin later in August after any issues identified by the contractor's readiness assessment have been resolved. HB-Line continues to process Plutonium feed material for disposition. K area is on schedule to begin down-blending Plutonium in September. L area has resumed fuel unloading operations.

Procedure changes were made to prevent the cable twisting which could have caused the tool to inadvertently disengage. The tool modification is being designed to eliminate the twisting of the cable altogether. Removal of the outer windows for cells 3 through 5 have been completed in 235F. Enhanced characterization to determine how much material is contained in these cells will be initiated later this month. DOE has prepared a draft of the final environmental assessment on spent nuclear fuel for Germany along with responses to all comments received. That document remains in DIE internal review with no specified date for release at this time. NM chair Powell noted that the CAB had not yet received the aforementioned draft.

Presentation: SRS L-Basin Spent Nuclear Fuel Program Update – Maxcine Maxted, DOE-SR

Ms. Maxted began her presentation with images of the Spent Nuclear Fuel facility and Spent Nuclear Storage. The logo for the facility features a phoenix as she explained because of the creature's mythical ability to renew itself out of the ashes and become reborn again. She noted that L-Basin contains and stores fuel under water, containing about 3.4 million gallons of water in total. Next, she presented a list of acronyms that would be valid during her presentation. She then explained two SRS Waste and Material Flow Path charts which were given to the CAB to depict the processes of L-Basin for taking in various spent nuclear fuels. Right now L-Basin has approval to process up to 1,000 bundles of Material Test Reactor (MTR) fuel and up to 200 High Flux Isotope Reactor (HFIR) cores. These materials are sent to H-Canyon using a 70 ton cask which typically holds 9-11 bundles of MTR fuel. Uranium is removed so it can be reused. The Plutonium and Fission Products, which are the waste materials, are processed through the liquid waste system to be converted into glass form and stored. The Uranium from this highly-enriched fuel is above 20% and then needs to be down-blended with natural Uranium to be brought to a level below 5%

to match the commercial standard before it leaves SRS. It is sent to fuel fabricators to be made into commercial fuel which is in turn sent to the Tennessee Valley Authority reactors to be converted into electricity for their customers.

L-Basin was refurbished in the 1990's meaning the mission of the facility changed; materials were cleaned out and more racks were added. It was one of 5 nuclear reactors on site that was repurposed. Ms. Maxted commented on the extreme cleanliness of the water in L-Basin which is a source of pride for the facility, noting that the water quality keeps the stored fuel safe so that it does not degrade. The pools for storage serve the purpose of protecting workers from being exposed to radiation. Only one fuel movement can be done at a time including receiving or transporting creating a "bottle neck" effect. Therefore the schedules for both actions need to be managed closely accordingly. Continuous surveillance and maintenance is projected to achieve at least 50 additional years of safe storage. Inspections are done on a routine basis. Fuel inspection tables to determine corrosion are intended to be installed which would also be monitored by video. Ms. Maxted presented photos of suspended and stored fuel bundles.

The capacity in L-Basin for storage is about 3,650 bundles, and current inventory is at about 3,020 bundles. High Flux Isotope Reactor (HFIR) Fuel Racks are 100% full at 120 cores total stored. Ms. Maxted also informed the CAB that it is believed SRS will be able to process HFIR cores by September 2017. She also presented two charts displaying EBS Bundle Positions Filled by FRR/DRR Receipts with H-Canyon Processing and L-Basin HFIR Storage Capacity, Receipts, Canyon Processing.

Next, Ms. Maxted presented and explained images of cask handling in L-Basin. She went on to list L-Area accomplishments for FY 2016. This includes receiving 6 FRR casks and 4 DRR casks as of July 30<sup>th</sup>, 2016. Pre-shipping was done in FY 2015 to H-Canyon for processing in FY 2016 so they would have fuel ready to go. Continued the safe storage of heavy water, which is water that was used in nuclear reactors as moderator. She then presented and explained images of a Legal Weight Truck (LWT) cask, noting there are 8 in existence, and a Shielded Transfer System (STS).

She went on to explain the transportation of spent nuclear fuel is governed by the Department of Transportation and the Nuclear Regulatory Commission. Both sets of rules must be followed. Spent nuclear fuel must be shipped in a Type B cask which have to be tested and certified for a number of conditions including normal and hypothetical conditions for worst-case scenarios. Normal conditions include heat of 100 degrees Fahrenheit, increased external pressure, vibration, free drop, penetration, cold of negative 40 degrees Fahrenheit, decreased external pressure, water spray and compression. Hypothetical conditions include free drop (30 feet onto a flat, unyielding surface so the packages' weakest point is struck), crush, puncture, thermal exposure to a 1,475 degree Fahrenheit fire for 30 minutes, and immersion – all of which done to the same package in the above order with the exception of immersion. She then played videos of such testing as part of her presentation. Next she displayed a graphic of each varying cask handled in L-Basin with names, sizes to scale next to average male human height, and maximum capacities. Ms. Maxted then summarized the topics she had described in detail in her presentation.

This presentation can be found on the CAB's website at: [cab.srs.gov](http://cab.srs.gov)

#### Committee Discussion:

CAB member David Hoel asked if SRS pays the fuel fabricator for their services. Ms. Maxted responded that SRS does not and also does not cover the cost of the natural Uranium used to down-blend the processed Uranium, TVA however does pay for these costs. NM chair Powell asked if a truck with a large cask seen on site at this time would not most likely be waste. Ms. Maxted stated that it depends on what the cask is carrying which could vary including spent nuclear fuel. NM vice chair Dawn Gillas asked if L-Basin is dependent to the Federal Repository to empty it. Ms. Maxted answered that it is not. NM vice chair Gillas also asked if the Idaho Exchange option was viable. Ms. Maxted replied that at the moment the Idaho Exchange is suspended. CAB member Hoel asked if SRS is considering putting Aluminum-clad fuel into a geological repository as-is for disposal. Ms. Maxted stated there are issues have to be resolved before SRS moves toward that option. CAB member Hoel asked why one chart presented on the EBS Bundle Positions Filled by FRR/DRR Receipts with H-Canyon Processing did not show any bundles out after FY 2023. Ms. Maxted responded that SRS only has the approval to do the 1,000 bundles at this time. CAB member Hoel asked if there was a capacity to add another dissolver to be able to process more waste. CAB member Patrick McGuire, DOE, answered stating one dissolver is for spent fuel and the other is for Plutonium. He also noted there is room for a third dissolver and if the decision is made and funding is available a third dissolver will be put in place. NM vice chair Gillas asked if that was "bottle neck" effect mentioned in Ms. Maxted's presentation. To which Ms. Maxted replied it is not. Mr. McGuire followed up to state that a more detailed explanation on this "bottle neck" effect would be completed for the CAB including a presentation. CAB member Hoel asked why the projected forecast inventory for bundles does not spike and instead remains relatively flat for future years. Ms. Maxted replied that this visual effect is due to the fact that there are two different scales for the chart. CAB member Hoel asked if the Type B casks used at SRS were tested to be certified. Ms. Maxted replied that they had, or models that were NRC-approved were used in testing and certification. He further questioned if the models were computer models. Ms. Maxted answered that in some cases computer models were used based on actual tests, and SRS also has testing facilities for these types of tests. NM vice chair Gillas asked if every cask used on the road had to go through the Type B cask testing and certification. Ms. Maxted answered that each model had to be tested physically to some standard. CAB member Hoel asked what kind of cask the Canadian liquid Uranium is kept in. Ms. Maxted replied that it would

be sent in an LWT. NM chair Powell asked what happens to casks once the materials are removed. Ms. Maxted responded that they are sent to the next reactor if scheduled or to a maintenance facility to fulfil annual requirements.

Once the presentations were over, CAB member Hoel commented that SRS should re-process the Aluminum-clad fuel while the H-Canyon is up and running, and not store it indefinitely until a repository is created. He further asked that an explanation in depth be presented regarding the Idaho Exchange.

CAB member Daniel Kaminski asked about seeking action while waiting for FAA regulation with regards to drones being operated over the SRS area. Mr. Giusti replied that there have been no further drone sightings since July 22<sup>nd</sup>, 2016. He further commented that it will be a vast process to seek these regulations. All other sites within DOE have similar problems. Drones are a much broader issue and until then personnel should remain vigilant. Safety is the number one concern of SRS and the site personnel are doing everything they can to uphold the safety of its members and the general public. In the recent instance mentioned in July, the pedestrian was stopped and the drone flight was discontinued as a result. Currently SRS does not have the authority to stop or impede any aircraft or drone since the airspace above SRS is public. Current regulations are only related to fixed-wing aircraft and drones do not fall into that category due to the differing altitude capabilities. NM vice chair Gillas asked if there had been any drones flying over K area, to which Mr. Giusti replied there indeed have been.

NM chair Powell commented on the importance that all CAB members attend all scheduled meetings and expressed gratitude to all present members in attendance.

#### Public Comments:

There were no public comments.

NM chair Powell adjourned the NM Committee meeting.

The next NM Committee Meeting will be held on Tuesday, October 4, 2016, from 4:30-6:20 p.m., at the DOE Meeting Center in Aiken, SC.

The online recording of this meeting is located on the CAB's website at:  
[cab.srs.gov](http://cab.srs.gov)