

Nov 17 2015

## **DOE-SR Agency Update to Savannah River Site Citizens Advisory Board**

*Terry Spears, DOE-SR Deputy Manager, used the information below to provide the DOE-SR Update on Tuesday, November 17<sup>th</sup>.*

Good morning!

Let me start by thanking you for your service on the board. It is important to me that I hear from you about SRS projects and activities. I did attend a committee meeting in October and found it informative.

At the Site we always start our meeting with a safety topic and I would ask you to be careful in the parking lot walking and driving. Last month we had a worker hit by a slow-moving pick-up in one of our laydown yards. The driver's vision was impaired by the morning sunlight and did not see the worker. The worker was taken to the hospital and is now recovering at home. So please be careful in the parking lot today and always.

Many of the topics I am going to cover this morning, you probably read about in one of our DOE-SR UPDATES.

I would like to clear up any concerns about commercial spent fuel from the Byron facility coming to SRS. SRS is not involved with this project. We were asked a question by the Office of Nuclear Energy as we often are by DOE programs about our capabilities. We told them our capabilities could not support this project.

### **FISCAL YEAR BUDGET**

We are under a Continuing Resolution until December 11, 2015. Later today you will receive a briefing on the SRS budget by John Lopez of my staff.

The President and Congress reached a deal on budget spending for the next two years. The Department strongly supports the budget deal passed by Congress, which will invest in America's economic security and national security, and provide essential relief from the sequester caps that have affected the Department's missions in nuclear security, research and technology for energy and basic science, and cleaning up our nuclear legacy.

We are still waiting for Congress to take budget actions. We will keep you updated as we move through the process.

### **Salt Waste Processing Facility Startup Milestones**

I continue to have productive discussion with DHEC on the Salt Waste Processing Facility startup milestones.

DHEC agreed to refrain from initiation of enforcement actions or imposition of civil penalties relating to the Salt Waste Processing Facility startup milestones through December 18, 2015, while our discussions continue. I greatly appreciate DHEC willingness to allow the discussions an opportunity to resolve the

issue.

### **STATUS OF SRNS OPERATIONS PAUSE**

All facilities under SRNS management have entered deliberate operations with exception of HB-Line. HB-Line may enter deliberate operations by the end of November. DOE-SR continues to assess SRNS activities.

The root cause analysis and associated corrective actions for the HB-Line Technical Surveillance Requirement (TSR) violation is complete and was presented to the SRNS Senior Management Review Board.

The root cause analysis found:

- Willful procedure violation by the work team.
- Unwillingness of the work team to call a Time Out.
- Significant departure from observed Conduct of Operations.
- Less than adequate First Line Manager performance.
- Less than adequate management engagement.

In addition, eleven "Other Causes" were identified and six Opportunities for Improvement. SRNS briefed DOE-SR concerning the report on November 5, 2015.

No facilities or organizations have completed actions required to exit deliberate operations and DOE-SR will review sustainability plans and assessment completed to supports the decision for exiting deliberate operations.

The SRNS Sustainment Plan is complete and will be revised as necessary as new information is learned. Sustainment plan actions include a half-day pause by each organization monthly for six months; an externally-led assessment of nuclear operations focusing on nuclear safety culture; quantifiable improvements in the training and qualifications program; and improvement to the Contractor Assurance System under the supervision of the SRNS Senior Management Review Board (SMRB). Long-term actions necessary to sustain improvement include requirements for periodic self-assessments, Internal Evaluation Board assessments, operational pause periods and routine periodic involvement of the Operational Excellence organization and the SMRB.

### **FIXED RADIOLOGICAL CONTAMINATION ON COMPRESSED GAS CYLINDER**

On November 4, 2015, a site contractor's Radiological Protection Department discovered fixed contamination on a compressed gas cylinder that was being prepared for return shipment to a vendor in Augusta Ga. The cylinder with the radioactive contamination, which was fixed under paint, has been processed through the facility in the past. As a result, the DOE Radiological Assistance Program, Region 3 personnel deployed to the location to determine if there are any issues with the inventory of SRS cylinders in storage. A courtesy notification was made to appropriate state officials in Georgia and South Carolina

The RAP Team completed surveying 66 compressed gas cylinders at the vendor location on November 11, 2015 and no radiological contamination was found on any of the compressed gas cylinders surveyed.

Savannah River Site Radiological Protection Department continues to conduct sampling and testing of the fixed radiological contamination found on the single compressed gas cylinder on SRS to determine isotopic breakdown of the contamination.

### **LIQUID WASTE PROGRAM**

Savannah River Remediation has operationally closed Tank 16 ahead of schedule. It is the seventh underground radioactive high-level waste storage tank closed at the Site, and the fifth tank closed since 2012.

We plan to start grouting Tank 12 in late January and should have it closed ahead of the May 31, 2016 milestone closure date.

Defense Waste Processing Facility produced 93 canisters of classified waste in Fiscal Year 2015. That fiscal year production brings the total number of canisters of immobilized waste to a total of 3,970 since DWPF operations began in 1996. Next month we anticipate achieving the 4000<sup>th</sup> canister.

Our interim salt processing system -- Actinide Removal Process (ARP)/Modular Caustic Side Solvent Extraction Unit (MCU) -- processed approximately 752,000 gallons of salt waste, bringing the total salt waste prepared to about 5 million gallons under the SRR contract.

In Fiscal Year 2015, we disposed of about 828,000 gallons of decontaminated salt solution and 1.5 million gallons of grout through the Saltstone facilities, bringing the total number of gallons of this waste dispositioned to 8.1 million gallons of Decontaminated Salt Solution.

SRR also created 2.7 million gallons of tank space through the Site's two Evaporators. This is the largest amount of space gain since 2010.

### **SALT DISPOSAL UNIT 6 UPDATE**

We have finished the primary construction on Saltstone Disposal Unit 6 (SDU-6), the first 30-million gallon mega-volume salt waste disposal unit being built at SRS. In October, we began liquid tightness testing. On November 3<sup>rd</sup>, we filled the unit with 30-million gallons of water to check for leaks.

As part of the testing, the 30-million gallon capacity unit was filled with water and a fluorescent dye was introduced. The purpose of the dye is to demonstrate that any damp spots found on the outside of the Unit came from the liquid inside. It is common and expected for a concrete structure of this size to have leaks. Following the addition of the dye, SRR confirmed that damp spots on the outside of the Unit were in fact coming from the liquid inside the Unit. The SRR Project Team will drain the Unit and repair the leaks from inside. The draining began on November 11, 2015, and is expected to take 5-10 days to completely drain. Once the Unit is repaired, the Liquid Tightness Testing will be restarted. The smaller SDUs on the site also showed some leakage during testing but were successfully repaired prior to waste disposal efforts. Once repairs have been made, the Liquid Tightness Testing will be performed.

SDU-6 will be drained into existing Z-Area drainage water basins for a controlled discharge to the environment via the normal drainage flowpath. When discharged, the water will traverse over land and will empty into an on-site tributary to the Savannah River, located over one-third of a mile away. The dye is certified by NSF International (the Public Health and Safety Organization) for use in drinking water, and therefore, there are no health or safety concerns with discharging this dyed water in the SRS ecosystem or the Savannah River. The reason for this notification to our stakeholders is that dye may or may not be visible in the tributary on the SRS site or in the Savannah River when the SDU is being drained.

### **DOUBLE-STACK CANISTERS**

In October, SRS workers have now relocated 156 canisters of classified waste from Glass Waste Storage Building (GWSB) 1 to GWSB 2, which begins the modification process for double-stacking canisters at Defense Waste Processing Facility. Actual double-stacking of the canisters could begin as early as calendar year 2016.

The concept is to take existing canister storage positions in GWSB 1, where canisters are now stored one per slot, and modify the slots to allow two canisters to be safely stored vertically in one position, one canister on top of the other.

Double-stacking canisters in existing GWSB 1 could increase storage capacity from 2,254 slots to 4,508 slots, continuing safe interim storage while creating adequate canister storage through Fiscal Year 2026. It would also postpone the expense of another storage facility estimated to cost as much as \$74 million.

The physical work to modify canister positions will begin this month and the project will continue to modify canister positions for another 7 to 8 years, as needed.

### **SALT WASTE PROCESSING FACILITY**

Salt Waste Processing Facility construction is 91.2% complete.

The successful installation of 36 centrifugal contactors was completed the week of October 5<sup>th</sup> and represents a major milestone for the project's construction.

Construction completion is scheduled for December 2016, and the contractor is projecting an April completion ahead of the current schedule. Operation with radioactive waste is projected to begin by December 2018.

### **NUCLEAR MATERIALS**

In Nuclear Materials, SRS has had several accomplishments in the fiscal year. These included:

- 80 bundles of Material Test Reactor (MTR) spent fuel dissolved in H-Canyon meeting the FY-15 planned goal representing 8 percent of the Amended Record of Decision campaign (1000 bundles).
- Nine Destructive Examinations of 3013 containers were conducted adding to the knowledge for safe storage of plutonium materials
- L-Area accepted 8 casks of foreign and domestic research reactor spent fuel receipts in support of the Nation's non-proliferation program
- Completed the Shielded Transfer System Modifications for acceptance of spent fuel from Canada in L-Area
- Completed changes to the Building 235-F safety basis documentation along with restoration of infrastructure in cells 6-9 to support initiation of risk reduction activities.

In 235-F, DOE has authorized work to proceed in cells 6 thru 9. The hot cell shield windows have been drained and the outer glass removal is nearly complete. Once the outer window removal is complete SRNL will conduct a more precise measurement of the amount of material (Pu-238) present in the cells.

### **ENVIRONMENTAL CLEANUP AND SITE SERVICES**

The 2014 Annual Site Environmental Report link went live on the SRS External Webpage on October 1<sup>st</sup>. Hopefully you were here yesterday and received a hard copy of the report when Mike Griffith of SRNS presented the Annual Site Environmental Report Update. If not, additional copies are available today.

SRS has successfully renegotiated our electrical power and transmission maintenance contract with SCE&G. This is a 10 year, \$300M contract that will help the Site right size its high voltage transmission infrastructure.

In Fiscal Year 2015, SRS met or exceeded all 117 Federal Facility Agreement (FFA) and Resource Conservation and Recovery Act (RCRA) milestones and deliverables.

### **D AREA ASH PROJECT**

The subcontractor, Envirocon, has completed ash consolidation from the 488-2D Ash Basin to the 488-4D Ash Landfill. Basin 488-2D is being backfilled to transition the basin to a water management basin.

In 488-4D, work continues to dry and contour the surface in preparation for the installation of a 21 acre geosynthetic cover.

A Request for proposals (RFP) for the D Area Ash Project Phase II subcontract will be issued on Nov 30th, with the contract to be awarded on March 31, 2016.

### **SAVANNAH RIVER NATIONAL LABORATORY UPDATE**

SRNL has substantially increased its business at Hanford (approximately \$12M in FY15); the lab has established an Office of Hanford programs, and is establishing a fixed office to be staffed in Washington State.

SRNL has also established a permanent liaison to EM-HQ (a one-year rotating position). The Lab is currently in the second year of that program, with Dr. David Hobbs currently serving as a member of the HQ staff.

SRNL now administers the Minority Serving Institution program for EM Headquarters; MSIPP supports science, technology, engineering and mathematics (STEM) activities at minority serving institutions (Historically Black Colleges and Universities, Hispanic Serving Institutions and Tribal Colleges and Universities). The MSIPP is part of EM's efforts to increase the community of technically skilled minority students who understand the breadth and significance of the EM mission, and who will be the next generation to enter DOE's workforce throughout the country.

In conjunction with the SRNS Board of Directors, SRNL has established a "University Scholars" program, a \$400,000 scholarship investment to create a more direct pipeline of students who can gain exposure to SRNL researchers. The pilot has identified the first round of five USCA students (at \$4000 per student per school year); plans are to export the program to Clemson, USC, GRU and Georgia Tech.

SRNL has signed a licensing agreement with SHINE Medical, a Wisconsin-based company, enabling SHINE to use unclassified SRNL tritium processing technology to produce Mo-99 for medical use.

SRNL deployed the GrayQb™ (Gray cube) gamma radiation mapping device at the Hanford Plutonium Reclamation Facility. This field deployment is sponsored by CH2M Hill Plateau Remediation Company. The deployment goal was to map the distribution of radiological contamination and locate contamination hot spots in the PRF canyon, where pencil tanks were removed and decontamination/debris removal operations are ongoing. Ten locations were analyzed using deployment

times of 4-15 hours and varying heights of 9-20 feet above the floor surface. Some of the radiological contamination hot spots locations identified by the GrayQb™ devices were areas where decontamination operations are ongoing and further decontamination effort was needed.

SRNL researchers visited the U.K. National Nuclear Laboratory as part of a personnel exchange to improve the environmental management knowledgebase and provide technological solutions in the areas of assessment of glass product performance, control and optimization of glass melting processes, and qualification of vitrified high-level waste (HLW) products. This reciprocal visit of SRNL personnel to NNL was part of a larger collaboration to evaluate and leverage technologies under development and in practice in the U.K. for the acceleration of DOE missions.

SRNL is collaborating with personnel from Pacific Northwest National Laboratory (PNNL) to study advanced waste-form glass ceramics for immobilization of waste from spent nuclear fuel separations processes. These studies are sponsored by the DOE Office of Nuclear Energy.

SRNL is collaborating with the DOE Office of Legacy Management to assess a number of former uranium milling and tailings disposal areas in the western United States. One of these sites is located in Riverton, Wyoming. Data from the Riverton Mill Site highlight the importance of evaporation and transpiration and the resulting mineral precipitation at arid and semi-arid sites. The data confirm that regional climate and hydrology are key factors that influence the behavior of subsurface contaminants and the potential effectiveness of alternative remediation options.

SRNL met with representatives of the Naval Undersea Warfare Center (NUWC) in Newport, RI to discuss progress and the path forward on a joint DOE/DOD initiative to evaluate solid-state hydrogen storage systems for unmanned underwater vehicles (UUVs). The Center is considering alternatives to batteries to power small UUVs. Because of SRNL's unique expertise in hydrogen storage materials and system engineering, the lab was asked to support this project by developing a preliminary hydrogen storage system design and model for a small fuel cell powered UUV. The project is funded jointly by DOE-Energy Efficiency and Renewable Energy and the Office of Naval Research.

A team of scientists and engineers from SRNL and PNNL provided independent technical evaluation to support the Tokyo Electric Power Company in implementing a frozen soil barrier as a countermeasure to address contaminated water in the environment around the damaged Fukushima Daiichi nuclear reactors in Japan. The frozen soil barrier encircling the damaged reactors limits the infiltration of groundwater into the reactors and the potential release of contamination.

As part of an overall strategy to reduce the level of mercury in the Liquid Waste System, a team from SRNL, SRR, external contractors, and DOE was chartered to identify and examine options to determine the best possible alternative means to remove mercury from this system and provide recommendations for implementation of preferred options.

Let me close by saying that we are delivering progress in our risk reduction missions at SRS.

James R. Giusti  
Director  
DOE-SR Office Of External Affairs  
W: [\(803\) 952-7684](tel:(803)952-7684)  
M: [\(803\) 645-1350](tel:(803)645-1350)  
E: [james-r.giusti@srs.gov](mailto:james-r.giusti@srs.gov)