# SRS UPDATE

NEWS FROM THE SAVANNAH RIVER SITE • FEBRUARY 2005

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## Major construction completed at Tritium Extraction Facility

The Savannah River Site recently recognized the completion of construction of the Tritium Extraction Facility's (TEF) major process systems.

Brig. Gen. Ronald J. Haeckel, principal deputy administrator for defense programs for the National Nuclear Security Administration in Washington, D.C., led the observance for the NNSA.

The $506 million project, a key part of the supply system for the nation's nuclear weapons stockpile, is forecast to start operations about 10 months ahead of the baseline schedule. The facility will be used to extract tritium (a radioactive form of hydrogen) from materials irradiated in Tennessee Valley Authority commercial nuclear reactors. Tritium is essential for modern nuclear weapons, but it decays rapidly and must be replenished.

"We are very proud of TEF's early construction completion. We will now move into 20 months of startup testing and readiness assessments," said Chuck Spencer, Westinghouse Savannah River Company's manager of Defense Programs. "The construction was not only completed early, but more importantly, it was completed safely. We look forward to the start of hydrogen testing in April, and commissioning the facility in 2006. Our critical ability to resupply the nation's tritium will then be restored."

"We're grateful for the excellent performance of the construction forces in safely providing a top-quality product," said Gen. Haeckel.

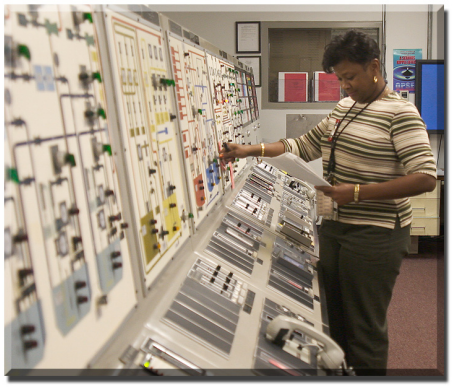
About 90 percent of the facility's systems have been turned over for startup testing, the next step toward completion of the project.

## HB Line conducts historic levels of work

For the first time in HB Line's history, all processing lines were recently being used at the same time.

Phase 1's South Line is being used in the PuCS campaign, in which Plutonium Contaminated Scrap, a highly enriched uranium (HEU), is shipped from K Area to HB Line, where it is repackaged into dissolvable cans and sent to H Canyon for use in the HEU Blend Down project.

In the Phase 1's North Line, HB Line continues to assist with FB Line deinventory operations. This includes dissolving metals and oxides from FB Line and 235-F, and immobilizing various other materials for disposal.



An operator performs work in one of the HB Line control rooms.

Phase 2 converts neptunium-237 solutions into an oxide powder. The oxide will be irradiated to Pu-238 in an Idaho nuclear reactor for use as a power source in NASA deep space programs.

In Phase 3, HB Line has been processing SRS radioactive sources for disposal. These were sources that have accumulated in HB Line from past missions. That work was completed six months ahead of schedule, making the Phase 3 line available for other missions.

Even with all this activity, the facility has experienced more than 400 days without a recordable injury.

All this work truly is historic, because at no time in the life of HB Line have all these processes operated at the same time.

## SRS employees figure heavily in Graniteville recovery

Numerous Savannah River Site personnel played an important role in efforts to assist the victims of the recent train wreck in Graniteville, SC.

To appreciate the train wreck of Jan. 6 in Graniteville, you must know hundreds of personal stories.

One of them certainly highlighted SRS's vital role—that of Mark Broome, trapped in a car, yards from leaking chlorine, and saved by SRS firefighters.

No involvement by SRS could be more important to Mr. Broome. Nonetheless, SRS's contribution was much wider and deeper.

At the incident command post, 52 SRS employees eventually signed in to help with the response and recovery. Generally, these were SRS Fire Department/Emergency Medical Service employees (including hazardous material responders), Aiken County Hazardous Material Team members, or part of the site's Critical Incident Stress Management team (who worked with victims and families).

But there were many more.

The Savannah River National Laboratory's Atmospheric Technologies Group quickly supplied data on the projected plume path and other weather information to authorities and continued such help in the following days.

The Savannah River Site's security contractor, Wackenhut Services Inc. (WSI), supplied people for door-to-door checks in a two-mile radius around the derailment, and WSI ensured that on-scene forces had the right personal protective equipment for chlorine (the site helicopter was also flown to Camden to pick up more protective suits).

Over the following days, specialized assistance, including the site's hazmat and rescue equipment, continued to be useful. Less glamorous facilities—such as portable toilets—were also supplied. Public service announcements helped people go home safely.

Selfless and speedy volunteers were put to badly-needed use. Hazmat-trained operating engineers stood ready if needed, as did carpenters. Members of the Fire Fighters Association, reserve deputies of the Aiken County Sheriff's Office, volunteer firemen from across the area, members of church and civic groups, all pitched in—some on the job, some on their own time.

The community can thank, but will probably never identify, them all. For instance, who'd have counted an SRS employee, as a member of a barbershop quartet, who went to shelters to entertain evacuees and volunteers alike? (See page 7 for story.)

SRS drills employees for such events, and is proud to assist their neighbors. However, SRS personnel hope their efforts will never again be needed in such a way. Meanwhile, as Aiken County Sheriff Michael Hunt said of SRS's mutual aid agreement with the county, and joint training for emergencies, "It all worked, and it was very crucial."

## Hanford River Protection Program milestone reached

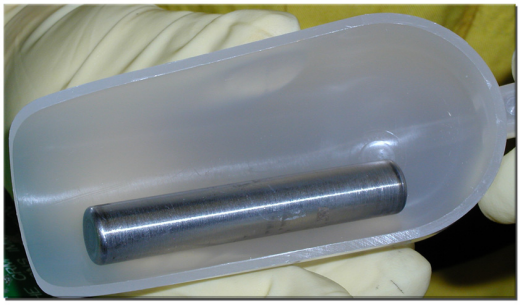
Andy Foreman, SRNL, conducts chemical testing of the resin for cesium removal.

With the vitrification of three Hanford nuclear waste tank samples, the Savannah River National Laboratory has completed the largest segment of its largest work for others program. Since 1996, SRNL has been supporting the Hanford River Protection Program (RPP), helping to design, develop and test processes for treating Hanford's tank wastes and closing its tanks. Hanford will treat its waste using a vitrification plant that is similar, but not identical, to the DWPF, and is expected to be operational in 2011.

In December, SRNL completed small-scale vitrification of the last of three Hanford tank samples—the final research and testing step in the major portion of SRNL radioactive work on behalf of RPP. This support has involved initial tank waste characterization and subsequent demonstration of various pretreatment steps. SRNL product testing on these immobilized Hanford tank waste glasses will be used by Hanford personnel to support qualification of the waste forms and provide information to support environmental permitting.

Although the largest task is now complete, SRNL is continuing to support RPP with projects such as R&D testing of the Backup Cs Ion Exchange removal resin, analytical method development work and support for computer modeling.

## HB Line completes 'sources to WIPP'



A recently dispositioned HB Line source.

HB Line recently completed a successful campaign in which 54 legacy sources were safely dispositioned, ultimately bound for the Waste Isolation Pilot Plant (WIPP) in New Mexico. In the end, 31 were disposed of as waste items, three were reclaimed through normal process operations, and 20 were reassigned to new owners.

Over the years, HB Line had accumulated radioactive sources from various missions. By removing the sources, HB Line would reduce associated hazards and administrative tasks.

Sources are small, controlled items (usually metal, encased within a protective material) that emit radiation for the calibration of equipment used to monitor radiological work or facilitate nuclear-related production. Frequently used sources include isotopes of cobalt, plutonium, neptunium, uranium and californium.

"The many lessons learned and expertise gained in the Sources to WIPP campaign will be valuable in any future source disposition work," says HB Line Facility Manager Charles Nickell.

## Barriers in place to protect groundwater

(From left) Andy Preston, Project STR, discusses job completion with Phil Prater, Physical Scientist, Soil and Groundwater Projects, DOE, the project subcontractor and Bill Spader, Assistant Manager for Closure Project, DOE.

Soil & Groundwater Closure Projects (SGCP) reached a major remediation milestone with the completion of the F and H Area barrier walls.

The barrier walls, an integral part of the F/H Area Groundwater Remediation Project, were constructed using a drill rig and an on-site batch plant to form underground grout columns. A total of 4,450 linear feet of these grout columns make up the barrier walls, which will reduce the spread of groundwater contamination from both the F and H Area seepage basins to Fourmile Branch.

The next step is to install the base injection system in F Area. The project team has slated the operation of the base injection system for July 2005.

In October 2003, SRS suspended operations at the F/H Groundwater Treatment Units with plans to move to this new phase of groundwater corrective action. The corrective action provides a cost-effective alternative to the traditional "pump & treat" groundwater systems that were previously used.

## SRS neptunium arrives in Idaho

SRS's first shipment of neptunium oxide has arrived safely in Idaho, at Argonne West Laboratory. Shipments are now being made regularly.

The material represents the last of the United States' neptunium inventory, and the last of the materials that must be stabilized to satisfy commitments for stabilizing nuclear materials.

Neptunium solution, a by-product of previous H Canyon processing, has been stored in liquid form for years. It is now being converted into an oxide (powder) form in HB Line.

The oxide will eventually be irradiated in Idaho, to be converted into plutonium-238 for NASA.

"The HB Line team has done such a great job to get to this point," says Phil Breidenbach, manager of H Area Completion Projects.

Processing and shipping are expected to continue until the work is complete, sometime next year.

Shipping neptunium oxide to Idaho.

## Closure recognizes its best

Over 160 SRS employees were recently honored by the site's Closure Business Unit.

At a recent celebration in Newberry Hall, Aiken, WSRC Chief Closure Officer Jack DeVine recognized the "Best of Closure" winners for Fiscal Year 2004.

In all, 30 accomplishments were recognized by the site's Closure Business Unit (CBU), which included 161 individuals. Winners were from all four business units, as well as the Savannah River National Laboratory, Internal Oversight and Public Affairs.

The awards recognize exceptional accomplishments of all kinds—prompt responses to challenges, innovative solutions to problems, decisive actions to preempt upsets, improvements in facility performance or efficiency, cost savings and the like.

In his remarks at the ceremony, DeVine called special attention to the teamwork—an SRS core value—that was a common theme among all the accomplishments. "Think about it," he said. "Your actions reflect teamwork at every level: individuals contributing above and beyond to make their organization or facility successful, CBU people hand-in-hand with their colleagues in other business units, WSRC people working to support our DOE client." He also pointed out the overall outstanding performance of the Closure Business Unit through the year. He characterized these awards as representative of what our "whole team has accomplished," and he thanked all of the recipients for their contributions.

DeVine established the Best of Closure program when he arrived at SRS in 2003. Winners are recognized quarterly in the Closure News, then are invited to the annual formal reception. They receive a letter and an engraved inspirational print.

## South Carolina Regional Future City Competition

Anderson Home School Association Students (from left) Elizabeth Hazelwood, David Brickle and Charlie Singleton, give spectators and judges a glimpse into the future as they display their winning city of the future "Ahsaville" during the South Carolina Future City Regional Competition.

Could you ever imagine having flying cars, cities on Mars and moving sidewalks? Surprisingly, they might become a reality, according to 14 student teams from Alabama, Georgia and South Carolina who participated in the recent South Carolina Regional Future City Competition.

Students, along with their engineer mentor and teacher, designed a future city computer model using Sim City 3000™ software, wrote an essay about the specifics of their city and built a scale model. On competition day they provided presentations to a panel of volunteer judges from SRS and the University of South Carolina Aiken.

The South Carolina regional winning team, Anderson Home School Association, Anderson, S.C., will advance to the National Future City competition in Washington, D.C., in February.

## WSRC opens Career Opportunity Center

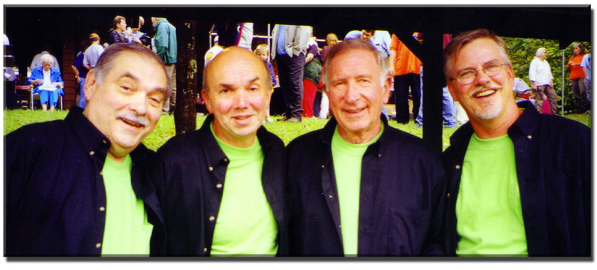
As a result of interest expressed by our employees, WSRC and DOE employees can now seek career assistance and research career opportunities at a new Career Opportunity Center at SRS. The Career Opportunity Center is located in 766-H and is a continuation of our company's interest in providing the services employees need to make knowledgeable career decisions.

The Career Opportunity Center offers a variety of resources to SRS employees.

Based on an employee's individual career interests, the Center will provide consultation in preparation for potential opportunities at SRS, with parent and partner companies, in local industry, or in the national or global job markets. Employees will have access to job search databases. Also provided will be resume writing, interviewing, and networking skills workshops. Career and occupational resources will be available for check-out or for use on the premises.

Since its opening in mid-December, jobs have been posted on our Career Opportunity Center web page and are available to all employees.

Employees are encouraged to make an appointment or just stop by and check out the services.



(From left) Randy Miller, Tenor; David Rothfuss, Lead; Joe Konzelman, Bass; and SRS employee, John Phillips, Baritone.

### Singing to relieve the blues

A local barbershop quartet made an important contribution to assist victims and emergency workers associated with the recent train disaster in Graniteville. Known as "The Instigators," they tirelessly sang their way through two shelters and the emergency command post in an effort to ease the fatigue, concern and pain the victims and workers of the disaster were experiencing. One member of the quartet, John Phillips, is an employee at SRS.

## SERVICE ANNIVERSARIES

**35 Years:** Edwin Davis, William Gearman, Joy Hamill, John Mattmann.

**30 Years:** Denis Altman, Joe Kays, Thomas Monahon, Arthur Stackpole Sr.

**25 Years:** Brenda Alejo, William Anderson, Viola Best, Peter Bogart, Beverly Burch, Clifton Carlson, Donald Choat, Christopher Connell, Rhonda Cook, John Croft, Ronald Crouch, Jacqueline Culligan, Janet Curtis, Neil Davis, Brenda Drake, Michael Green, Craig Hamilton, Roy Hubbard, Rajan Thyagarajan Iyer, Byron Johnson, James Ledford, Robert Malstrom, Michael Milnes, Lois Morrison, Allen Neal, Carolyn Nichols, Jonell Obryant, Asoka Pillai, Everett Rabon Jr, William Ramsey Jr, Jeanette Roundtree, Gary Siegmund, Sandra Smith, Stanley Stonehill, Vicki Thomas, Marilyn Thompson, Roger Throne, Jann Smith, Richard Vine Jr, Deborah Wilkins.

**Retirements:** Edward Ball, Hellen Bond, Warren Edmonds, Wayne Fort, Vicki Howard, Nancy Jones, Don Melton, Ronnie Pernell, Joseph Rideaux, Walter Williams.

## Suspension work complete in F Area

With the completion of suspension activities in January, F Canyon has now been placed in "suspension mode." Operations in the last in-service evaporator in the facility are complete, and the evaporator has been flushed and cleaned.

F Canyon is the first major nuclear facility at SRS to undergo suspension and deactivation. Suspension involved safely stopping and laying up all facility operations. Deactivation, which is nearly half complete, involves safely and permanently removing systems from service.

Bob McQuinn (left) and Alan Peak monitor operations during the last furnace run in FB Line.

FB Line, a finishing plant that sits atop F Canyon and is the canyon's sister facility, also reached a major milestone when it completed its last plutonium processing work. FB Line now has to finish the last shipments of materials to other onsite facilities, which is expected to be complete in mid-February. Then, in late February or early March, the end of an era will come when F Area's security status is downgraded so that a security presence is no longer required.

Final shipments to K Area are planned in the near future, and then deinventory work will be complete.

Historically, F Canyon operations recovered plutonium-239 and uranium-238 by a chemical separation process after dissolving aluminum-based irradiated fuel slugs or rods from the site's production reactors and other test and research reactors from around the world.

**SRS Update Goes Monthly!**

Beginning with this issue, SRS Update will be printed monthly. Providing this publication more frequently will help us to keep you better informed about SRS news and events.

SRS®

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