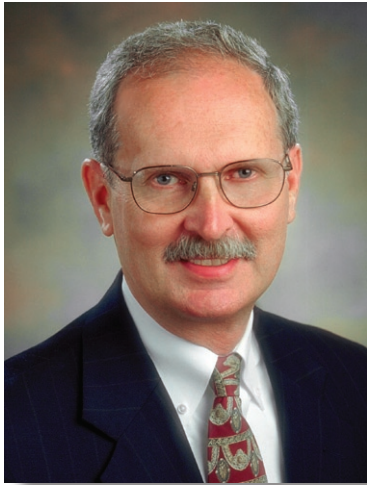


Westinghouse Savannah River Company

**Annual Report
2004**



Message from the President

SRS continues to meet our nation's needs

For more than half a century, the Savannah River Site has met the needs of this nation, South Carolina and the surrounding communities. Today, I am pleased to report that in Fiscal Year 2004, we continued our tradition of accomplishment.

The following pages highlight much of the success of our site during the past year. For instance, we witnessed the Savannah River Technology Center becoming the Savannah River National Laboratory, a significant designation that opens new doors for our researchers. As a matter of fact, we are featuring their work throughout this Annual Report. However, we've also met many milestones in many other areas. For example, we shipped the 10,000th drum of transuranic waste out of South Carolina—12 years ahead of the original schedule. The SRS accelerated cleanup decommissioning and demolition effort has eliminated over 100 unnecessary, unused buildings, saving taxpayers' money. Through it all, we kept safety first.

All of our achievements are the direct results of the expertise and innovation of our people. While important facilities and infrastructure play a significant factor in properly doing our work, it's our employees who make the difference every day.

Our past and present demonstrate our abilities to safely meet missions now and in the future. This Annual Report underscores that fact, marking SRS as a top performer in the DOE Complex. We will continue to meet our nation's needs; our focus will not stray.

A handwritten signature in black ink, appearing to read 'Bob Pedde'. The signature is fluid and cursive, with a large initial 'B' and 'P'.

Bob Pedde, President
Westinghouse Savannah River Company

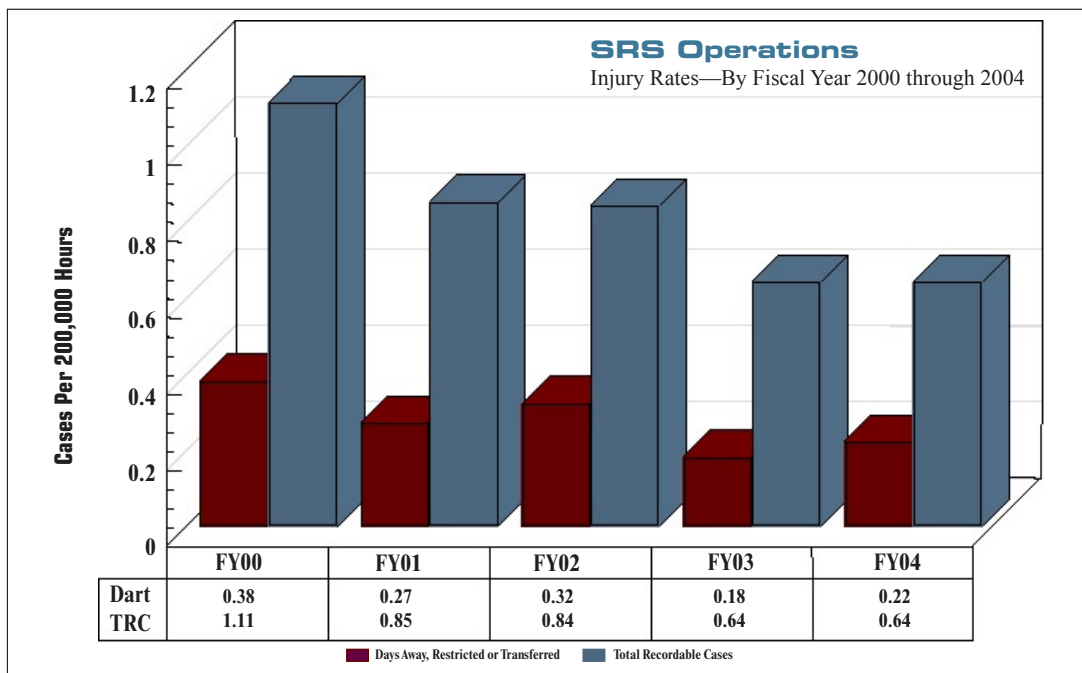
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Safety Remains Top Priority

In FY04, WSRC Team employees achieved another safety milestone by surpassing 10 million hours without an injury that required an employee to miss a day from work. This is the fourth consecutive year (2001, 2002, 2003, 2004) WSRC Team employees have achieved over 10 million hours worked without a lost time injury. Although the overall injury and illness rates for the last five fiscal years appear to be improving, the WSRC Team employees remain committed to challenging at-risk work practices and conditions.



Environmental Monitoring Results Show Low Public Impact

The potential impact of the Savannah River Site (SRS) on the public continues to be far below the U.S. Department of Energy (DOE) all-pathway dose standard of 100 millirem (mrem) per year, according to the latest SRS Environmental Report.

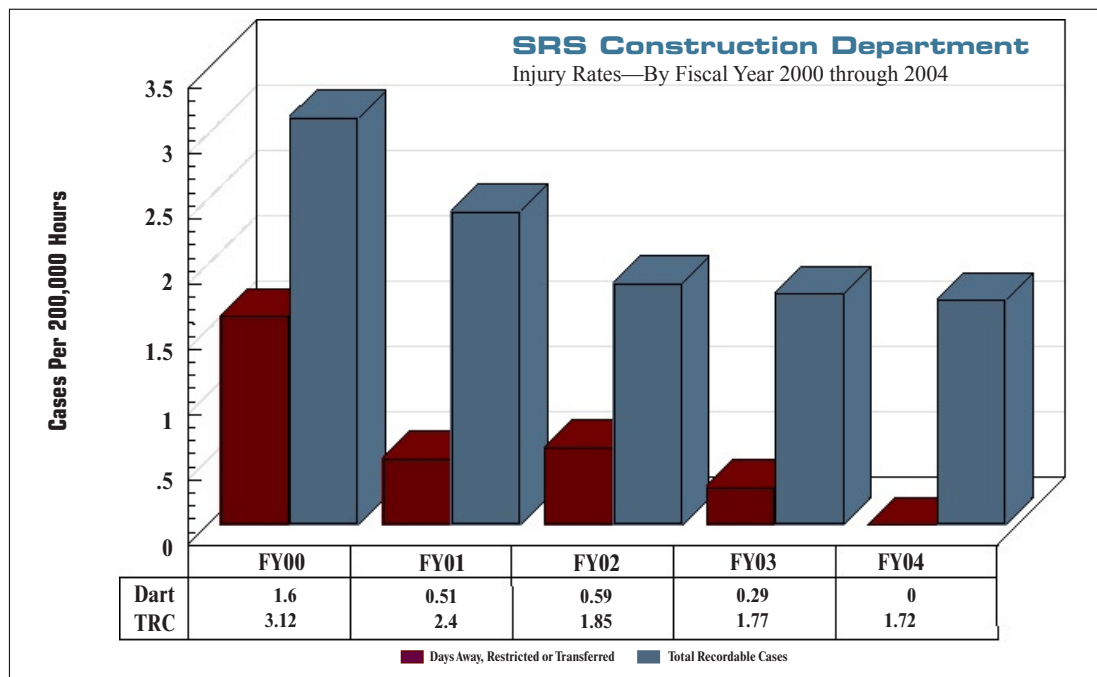
The largest radiation dose that any single offsite individual could have received from SRS operations in 2003 is estimated to be 0.19 mrem (an mrem is a standard unit of measure for radiation exposure), which is only 0.19 percent of the 100 mrem DOE standard. This estimated dose is well under the natural average dose of about 300 mrem per year to people in the United States—and just slightly more than the 2002 dose of 0.18 mrem.

Monitoring Waterways

SRS had a National Pollution Discharge Elimination System (NPDES) compliance rate of 99.7 percent in 2003. The NPDES program protects streams, reservoirs and other wetlands by limiting all nonradiological releases. Discharge limits are set for each facility to ensure that SRS operations do not degrade water quality.

Effluent monitoring and environmental surveillance are conducted extensively within a 2,000-square-mile network reaching 25 miles from SRS—with some monitoring performed as far as 100 miles from the site, including the Savannah River. The area includes neighboring cities,

The site's Construction Department once again attained a remarkable safety achievement during this fiscal year. They broke a record set in July 1988 for the number of man-hours worked without an injury requiring an employee to miss a day from work. The overall injury and illness rates for the previous five fiscal years have continued to improve resulting in no Days Away, Restricted or Transferred (DART) injuries for FY04. The Construction Department continued to demonstrate injury-free work practices with 2,291 safe days and over 14.6 million safe hours.



towns, and counties in Georgia and South Carolina. Thousands of samples of air, rainwater, surface water, drinking water, groundwater, food products, wildlife, soil, sediment and vegetation were collected and analyzed for radioactive and nonradioactive contaminants.

Still, we know we can and must continue to improve. The July tragic death of a vendor employee was a setback for all who work at the site, and a difficult reminder of why safety must remain our most important value. We only truly succeed when every person is free from injury each day, a standard that will remain our shared goal.

The potential impact of Savannah River Site radiological operations on the off-site public continues to be consistent with recent years, which have shown the lowest levels in site history and are well within DOE and EPA standards.

America's Newest National Laboratory

In May 2004, Secretary of Energy Spencer Abraham designated the Savannah River Site's applied research and development laboratory as the Savannah River National Laboratory (SRNL). While the national laboratory designation is new, SRNL has a half-century tradition of serving the nation's research and development needs.

Achieving national laboratory status will benefit SRNL and SRS by providing a national program focus for Energy and Defense, giving the lab an enhanced ability to compete for DOE and other government missions, expanding recruitment ability and giving SRNL raised stature.

Originally called the Savannah River Laboratory, the lab changed its name to Savannah River

Technology Center in 1992 as its scope expanded to better meet the challenges of the era. Historically, the laboratory has provided the applied research and development support needed to start up and operate SRS. Over the decades, the lab's work expanded to other offices in DOE and other federal agencies that could benefit from the expertise developed here.

SRNL Today

Today, about half of SRNL's work is funded by SRS. The other half is work on behalf of—and funded by—DOE Environmental Management, DOE Office of Science, National Nuclear Security Administration, Hanford River Protection Project, the International Atomic Energy Agency, the Department of Homeland Security, the U.S. Army, the Environmental Protection Agency,

the Federal Bureau of Investigation, the Nuclear Regulatory Commission and other customers.

To ensure that its customers benefit from the best science and technology for their needs, SRNL collaborates with universities and other laboratories in partnerships that make use of each institution's areas of expertise. In 2004, SRNL signed agreements with Oak Ridge National Laboratory, the University of South Carolina, the Medical College of Georgia and South Carolina State University to look for opportunities to combine their expertise to meet pressing regional and national technology needs.

“President Bush and I are proud of the scientific and technical work ongoing at the Department of Energy's national laboratories. And today, we are even more proud to designate this new laboratory and make it a full partner in the critical missions performed by DOE facilities.” —Secretary of Energy Spencer Abraham



Secretary of Energy Spencer Abraham (left) congratulates South Carolina Governor Mark Sanford on the National Laboratory designation

Energy Security: Hydrogen—Fueling the Future

The Savannah River National Laboratory’s half-century of support for SRS’ tritium programs has resulted in unmatched expertise in the handling, processing and storage of tritium and other forms of hydrogen. That expertise is finding new uses, as America prepares to move toward the use of hydrogen as a significant energy source for our cars, homes and industries.

SRNL collaborates with universities and industry to advance hydrogen technology. Aiken County’s new Center for Hydrogen Research, which broke ground in 2004 at the Savannah River Research Campus adjacent to SRS, will advance those collaborations. SRNL will lease half of the facility from the County; the other half will



The new Center for Hydrogen Research will provide world-class laboratories for the work being performed by SRNL researchers, while acting as a catalyst to draw universities and industries conducting hydrogen research

be available for lease by universities, automotive industry and others conducting related hydrogen research, allowing for the kind of collaboration that leads to practicable results.

SRNL’s hydrogen research takes on some of the most challenging issues facing the new “hydrogen economy.” Among the issues SRNL is working on:

- How do we safely, cost-effectively and practically store hydrogen for use in cars, homes and industry? SRNL is working on various technologies for the safe storage of hydrogen, including light-weight specialty materials, as well as the use of glass microspheres (combining the lab’s skill in glass technology with its hydrogen expertise).
- How do we produce enough hydrogen to meet the need? SRNL has just completed the first phase of a study that shows that producing hydrogen from water by using heat produced by a nuclear reactor can be a practical part of an overall future energy strategy.

Keeping Our Nation Secured and Prepared

Quietly, over the Savannah River National Laboratory's 50-year history, the lab has contributed to the nation's security in a number of ways. Traditionally, the lab has provided the research and development support needed to continuously improve the production, processing, storage and handling of tritium for our national defense; to safely package, transport and store nuclear materials; and to advance nuclear nonproliferation goals.

More recently, SRNL researchers are applying their expertise—in fields ranging from robotics development to highly sensitive chemical and radiological detection and analysis—to a wide range of security-related needs.

- At the request of the Defense Threat Reduction Agency, SRNL developed a mobile robot designed to disable or disarm Improvised Explosive Devices in Iraq and other military theaters. Two prototype robots have been deployed in Iraq.
- SRNL has developed a portable device that combines a radiation detector with a global positioning system to allow the identification and location of potential threats.
- The laboratory assisted the National Institute of Justice in identifying the technology needs for urban search and rescue efforts.
- SRNL developed a hand-held radiation detector for use by ship-boarding personnel to survey containers stacked on cargo ships.
- SRNL conducts numerous training courses for personnel from the FBI, Coast Guard, Customs and Border Protection and other security-related agencies on topics that include packaging of radioactive and hazardous evidence, detection of contraband materials for weapons of mass destruction, radiological crime scene processing and others.
- The laboratory assists the FBI in the areas of radioactive crime scene processing, hazardous evidence packaging and forensic examination of radioactively contaminated evidence.
- The laboratory has developed many specialized sample collection devices. The ACE (Atmospheric Contaminant Extractor) sampler—which collects

all aerosols, including chemical agents; radioactive particles; microorganisms (such as spores, bacteria, and fungi); and residual substances from explosives—is proving to have usefulness beyond homeland security purposes. It was chosen by NASA for surrogate tests of Martian type landscapes and to test the air quality on the Space Station.

- SRNL has recently partnered with other national labs in testing and evaluating radiation detection systems for the protection of U.S. ports and transportation centers.



Atmospheric Contaminant Extractor in the desert simulating an extraterrestrial landscape

Sharing Our Expertise

The Savannah River National Laboratory conducts research and development for a number of non-SRS customers, especially customers across the DOE Complex, making use of the same skills and expertise that support SRS operations.

The largest of these contracts—totaling over \$11 million in FY04—is the work for the Hanford River Protection Project. Using much of the same SRNL expertise that has made the design, startup and operation of DWPF possible, along with the expertise that is supporting the closure of SRS' high-level waste tanks, the laboratory is conducting numerous projects to design, develop and test processes for closing Hanford's high-level radioactive waste tanks and treating its waste.



SRNL conducts pilot-scale testing of Hanford's waste pretreatment system, including the evaporator system

SRNL is also leading a DOE complex-wide initiative to study the ways in which the earth is capable of repairing environmental damage on its own. Results of this three-year Monitored Natural Attenuation project are expected to accelerate cleanup by a minimum of 10 years for DOE sites that have groundwater plumes contaminated with chlorinated solvents.

As part of DOE's Risk Reduction Technical Assistance Program, SRNL is providing environmental technical assistance to cleanup projects at the Oak Ridge Reservation and to sites undergoing closure by the DOE Ohio Field Office, including the Fernald, Miamisburg (Mound) and Ashtabula sites. This assistance includes developing recommendations on how these sites can characterize and clean up soil and groundwater contamination.

SRNL developed two different laboratory bench-scale methods to demonstrate Fluidized Bed Steam Reforming, a technology that destroys organic components in waste. This technology is being considered for low-activity waste (LAW) at the Idaho National Engineering and Environmental Laboratory, for LAW at Hanford, for SRS Tank 48 waste and for SRNL High Activity Drain wastes.

SRNL has demonstrated a unique capability to build, certify, train and install high precision coulometry systems for the precise measurement of nuclear material, with over 10 systems throughout the world. The most recent systems were delivered to DOE's New Brunswick Laboratory to upgrade their high reliability nuclear material assay measurement programs.

Accelerating Cleanup Today and Tomorrow

SRS's skyline is changing dramatically, with more than 100 buildings gone. Work is concentrated in a few key areas and projects: Demolition in T, D, M, A and F areas; R Area Disassembly Basin evaporation; and the 247-F Closure Project.

Area Updates

T Area (TNX) is now a field of empty concrete slabs, and the area is undergoing final soil and groundwater remediation.

In D Area, demolition work is well ahead of schedule, with 29 buildings down. All that will remain standing after 2006 is the power plant, which is operated by South Carolina Electric & Gas.

M Area's fuel fabrication facilities, where the site's production process once began, are gone. The ambitious Six Pack project—the demolition of six buildings encompassing 150,000 square feet—was completed this year well ahead of schedule. Many more buildings have been completed as well, for a total of 13 facilities demolished in the area.



Building 313-M is one of more than 100 buildings demolished so far

By the end of 2006, more than 250 facilities will be demolished.

In A Area, Building 708-A—which once housed the main cafeteria and credit union—has been removed. Some buildings have been dismantled and removed by the economic development organization Southern Carolina Alliance, for future use elsewhere.

R Area’s disassembly basin, which once served R Reactor, is being emptied via evaporation and shipping of the water to the Effluent Treatment Project. This two-pronged approach will continue until 3 million gallons have been removed. Then, the remaining water will be grouted in place, and the disassembly basin building will be demolished.

Work in the 247-F Closure Project is also well ahead of schedule, with 43 of 84 core zones complete. Zone deactivation is expected to be complete in 2005, with demolition complete in 2006. In the end, five complex radiological buildings will be demolished down to the slab.

In all, aggressive, safe cleanup continues ahead of schedule and under budget at SRS. As the site continues to successfully reduce risk, workforce restructuring in FY04 allowed SRS to place resources where necessary, while also reducing the number of employees. As a result of continued risk reduction, WSRC expects more workforce restructuring in FY05. Still, there is important site work scheduled to continue until 2025.

Project	Complete in 2006	To Go	Completion Date
D&D	~3 million square feet demolished	~7 million square feet	2025
Tank closures	3 tanks closed	48 tanks	2020
Salt solution dispositioned	3 million gallons	82 million gallons	2019
Soil & groundwater remediation	64 percent of waste sites	36 percent	2025
Waste solidification	~2,200 canisters poured	~2,800 canisters	2019
H Canyon and HB Line	Maintain continuing processing capability		

F Area Closure Remains on Schedule

Deactivation work in F Canyon and FB Line is continuing to make excellent progress, and is nearly 50 percent complete.

F Canyon's work is being accomplished safely by disciplined, multi-talented teams, each containing all the skills and experience needed to get the work done.



F Canyon

The Future

Although FB Line workers are already beginning deactivation, the main goal in that facility is finishing its plutonium stabilization mission and emptying the facility. As of the end of FY04, FB Line had completed and shipped 858 containers, each containing one bagless can, and is three months ahead of its deinventory schedule. Deinventory was scheduled to be complete in June 2005; it is now expected to be complete in March 2005.

Part of F Canyon deactivation is emptying its former operating systems, shipping legacy materials out and relocating necessary F Area functions to other areas. Solvents, which represented the most significant fire hazard in the area, are now removed from F Area and are being steadily dispositioned from SRS. Emergency responsibilities have been transferred to the F/H Area Laboratories, which will continue operating to support other facilities across the site.

Work continues ahead of schedule to deactivate systems and facilities in F Area, with an overall goal of reaching a cold, dark and dry state in F Canyon and FB Line by the end of 2006.

Reducing the Inventory of Liquid Waste



Looking down on the waste tank top of Tank 16

In 2004, SRS made steady strides toward managing space and reducing inventory in its 49 high-level waste tanks, which are essential to continued successful operation of site facilities.

SRS waste disposition benefited in 2004 when Congress and the President settled the Waste Incidental to Reprocessing issue. This resolution opens the door to reducing the site's waste inventory.

Facilities such as the Defense Waste Processing Facility, H Canyon and F Canyon must be able to send waste materials into the tank farms—the collection of tanks holding the waste—or they cannot operate. Currently, those tanks contain about 36 million gallons of liquid waste that is destined for processing in one of several site facilities.

Work Accomplished

DWPF gets its feed directly from the tanks in the form of sludge. In 2004, the third batch of sludge—each of which can take years to process—was completed and transferred to DWPF's feed tank.

Another facility, the Effluent Treatment Project (ETP), is instrumental in keeping the waste volume as low as possible by treating the liquid portion of the waste and sending clean water to the Savannah River. In 2004, ETP received and processed all legacy aqueous PUREX waste, a result of decades of canyon operations that had been stored in the tank farms.

Tank farms continue to serve area facilities by accepting wastes—both routine transfers and specific, unusual transfers.

Across the tank farm complex, especially in F Area, there is considerable focus on risk reduction through deactivation. In F Tank Farm in 2004, the DOE Complex's first high-level waste evaporator was deactivated.

During the year, tank farm employees also worked toward the future, converting an existing facility for use in removing actinides from waste and completing conceptual design for a second small-scale facility, to be used for salt processing until a full-scale Salt Waste Processing Facility is operational.

In 2004, H Tank Farm accepted the first transfer of neptunium from H Canyon.

Final Closure Rests With Soil and Groundwater Cleanup

Cleanup of SRS soil and groundwater continues under an aggressive, integrated, area-by-area approach that will see one site area completely closed by the end of FY06 and another in the active process of being closed. Working closely with the site's Decommissioning and Demolition (D&D) organization, Soil & Groundwater Closure Projects (SGCP) will clean up and close SRS areas sequentially.

Of 515 waste sites at SRS, 311 have been completed and another 52 are in remediation.



Workers install equipment in preparation for another grout pour at the Old Radioactive Waste Burial Ground solvent tank closure project

In FY04, all demolition work in T Area was completed. SGCP final remediation work to support an Area Closure in FY06 was initiated in the summer of FY04. That final remediation will remove contaminated soils from the T Area Outfall Delta and cover the waste units and several concrete slabs from demolished facilities in T Area with soil, then capping the area and planting grass over it. This work is on schedule to be complete by the end of FY06.

M Area and R Area are the next two areas targeted for final closure. An operation known as the Dynamic Underground Stripping system is being installed in M Area, which will make great strides toward completing final groundwater cleanup. M Area closure is planned in FY10.

Underground barrier walls are being built in F and H areas, with the final wall in F Area completed and wall construction in H Area under way. The walls are being built to reduce the spread of groundwater contamination from the closed F and H Area Seepage Basins to Fourmile Branch. The South Carolina Department of Health and Environmental Control has required that the installation be complete by March 31, 2005.

Permanently Disposing of Waste

Since 2001, the site has been sending portions of its low-level radioactive waste to the Nevada Test Site and Envirocare of Utah, mixed waste to Envirocare and transuranic waste to the Waste Isolation Pilot Plant (WIPP) in New Mexico.

Transuranic (TRU) Waste

The Waste Isolation Pilot Plant (WIPP) is the Department of Energy's facility for disposing of transuranic (TRU) waste from across the DOE Complex. SRS began shipping its TRU waste to WIPP in 2001, initially making about one shipment a month.

In 2004, SRS again dramatically accelerated its TRU waste shipping schedule. SRS is now making 24 shipments per month, compared to 15 per month the previous year. At this rate, the site expects to finish shipping the remaining 16,100 drums by 2006. This date, compared to the original target date of 2014, saves taxpayers approximately \$100 million.

When the Ship to WIPP program began, there were approximately 30,000 drums containing TRU waste in storage at SRS. In FY04, 239 shipments (which included shipment of the 10,000th drum of TRU waste) were made to WIPP. This number reflects approximately 50 percent of drum shipments, a milestone achieved significantly earlier than the original baseline schedule. A total of 447 shipments (13,900 drums) have been made since the Ship to WIPP Program began.

Low-Level Waste

Due to the acceleration of excess facilities decommissioning, SRS disposed of over 26,000 cubic meters of low-level waste (LLW), an increase of 60 percent over the previous year. In addition, 1,512 cubic meters of legacy LLW was disposed resulting in essentially a zero backlog of LLW. This legacy was disposed of well ahead of the FY06 goal and is included in the above total. LLW shipments are sent to DOE's Nevada Test Site and to Envirocare of Utah.



Loading TRUPACT II containers on TRU Pad 3 Burial Ground

An important part of SRS' strategy for safely and cost-effectively managing wastes is the use of qualified off-site treatment and disposal facilities for wastes that are technically or economically unsuitable for on-site disposal.

Permanently Disposing of Waste

Depleted Uranium

Depleted uranium (DU) liquids and oxides continued to leave South Carolina in 2004.

Depleted uranyl nitrate (DUN) is shipped from F Area to Permafix in Tennessee, where it is treated and turned into a grout material. From there, it is sent to the Nevada Test Site for final disposition. In FY04, 16 of 40 total shipments were made to Nevada, with the remainder expected to be completed in FY05 and FY06, depending on funding.

Depleted uranium oxide (DUO), a powder-like, low-level radioactive material that is stored in more than 33,000 55-gallon drums, is being sent by rail to Envirocare of Utah. About 10 percent of the

shipments—3,270 drums—were completed in FY03, with another 2,024 drums completed in FY04.

Shipments are expected to be complete by about 2008.

DUN and DUO are uranium byproducts of the F Area process. They are safely stored until disposition can be completed.

Mixed Low Level Waste

In 2004, SRS completed characterization, manifesting and shipment of 285.9 cubic meters of mixed waste for treatment and disposal. (Mixed Low Level Waste is waste that is both radioactive and hazardous.) Fifteen truck-loads of waste were shipped to Envirocare of Utah for treatment by macroencapsulation or stabilization.



A worker moves a drum containing depleted uranium oxide into a railcar

Dispositioning Waste through DWPF

The Defense Waste Processing Facility (DWPF), the largest radioactive waste vitrification plant in the world, has produced 6.7 million pounds of glass, containing 1.9 million pounds of waste, in 8½ years of radioactive operations.



The Defense Waste Processing Facility has been operating since 1996

In FY04, the facility staff took steps to increase the amount of waste contained in each canister by 20 percent, which will result in about 1,000 fewer canisters over the life of the facility and a savings to taxpayers of about \$1 billion.

By the end of the fiscal year, DWPF had produced more than 1,700 canisters of classified high-level waste—but those canisters contained as much waste as 1,800 previous canisters. Canister production remains ahead of schedule, with facility workers focusing on increasing the rate of waste loading still further.

Melter 2, which has been in service since spring 2003, continues to perform even better than its predecessor, which functioned four times longer than its design life. DWPF's third melter has been completed and is ready when needed. The process has begun to build Melter 4—which may be the last one the facility will need to complete its mission.

The Glass Waste Storage Building, which is used to hold canisters until they can be shipped to a national repository, is expected to exhaust its storage capacity before a national repository is ready. Therefore, a second building is under construction.

The Saltstone Facility, which converts the low-level portion of the site's liquid wastes into grout for permanent on-site disposition, is preparing to restart in the summer of 2005, when feed is available. Modifications are successfully ongoing to enable the facility to process additional materials in the future.

Savannah River National Laboratory developed a new frit—the sand-like material that is mixed with the waste to form glass—that maximizes melt rate and waste loading in DWPF.

H Canyon/HB Line Stabilize Legacy Materials

H Canyon and HB Line saw major milestones in 2004, completing SRS spent nuclear fuel processing and beginning another campaign that will see the United States' last neptunium materials stabilized and shipped off site.

H Canyon finished processing SRS's last spent nuclear fuel in January 2004, and began processing SRS's unirradiated fuels—those that had not yet been placed in SRS's reactors when the Cold War ended in 1991. Highly enriched uranium (HEU) is recovered in H Canyon, then blended with natural uranium to form low enriched uranium (LEU). The LEU is sent to Tennessee to be converted into materials suitable for use in the Tennessee Valley Authority's commercial power reactors. HEU dissolution and LEU shipments are proceeding well ahead of schedule, with operations expected to be completed in late 2006.



H Canyon

In 2004, H Canyon also supported F Canyon deactivation by successfully starting up two operations previously performed by F Canyon—processing of lab sample returns and supplying bulk chemicals to other site facilities.

In HB Line, which sits atop the canyon, workers completed stabilization of materials from Idaho nine months ahead of schedule.

Also in HB Line, neptunium processing began ahead of schedule. The neptunium solutions, which have been stored in H Canyon since the 1980s, represent the last of the United States' neptunium inventory. The solution is being converted into an oxide form in HB Line's Phase II facility, then shipped to Idaho for eventual use in the space program.

Neptunium from SRS will be converted to Pu-238 and used to power the nation's deep-space probes for the next 20-30 years.

The Safety Analysis Report for Packaging that the Savannah River National Laboratory prepared led to the certification of the 9975 package for the shipment of neptunium oxide, a necessary part of this important program.

Safe, Secure Storage for the Nation's Nuclear Materials



The K Area Materials Storage Facility (KAMS) is located in the building that housed K Reactor

SRS is working to reduce risks nationwide by safely storing some of the nation's excess plutonium in preparation for final disposition.

The Foreign Research Reactor and the Domestic Research Reactor programs are scheduled to continue until 2014 and 2019, respectively.

Nuclear Materials Management, which includes buildings 105-K and 235-F, has the role to safely store, manage and protect the nation's plutonium until it can be processed through the future Mixed Oxide Fuel (MOX) Fabrication Facility or another disposition process.

A significant accomplishment during the year was that 235-F Limited Extent Surveillance Facility was declared operational. The facility provides interim surveillance capability until the Storage and Surveillance Capability Line Item project is complete. This achievement now decouples FB Line from 3013 surveillance, enabling SRS to complete deactivation activities in FB Line.

FY04 was an important year for Nuclear Materials Management, seeing such achievements as:

- Providing input to support DOE's proposed Plutonium Vitrification Facility as an alternative immobilization strategy for plutonium that cannot be sent to the MOX facility.
- Transferring design authority responsibility for surveillance of all DOE complex plutonium packages to SRS from the Los Alamos National Laboratory. Work is under way on establishing the surveillance baseline.
- Successfully transferring unirradiated Mk-22 fuel assemblies to H Area, where they will be dissolved, blended down and sent to Tennessee Valley Authority (TVA) vendors to fabricate TVA power reactor fuel.



235-F Facility, future home of the 3013 Container Storage and Surveillance Capability Project

New Tritium Facility Complete

The Savannah River Site's Tritium Modernization and Consolidation Project Team overcame numerous challenges throughout the seven-year project life to complete the project within the schedule and under budget, at a cost of \$138.6 million.

In August 2004, Secretary of Energy Spencer Abraham recognized the team's accomplishments by awarding the project the Secretary's Award of Achievement at the Secretary of Energy's fourth annual Project Management Awards. The award acknowledges outstanding performance based on successful completion, or near completion, of a project and overall management of the project or program.

In addition, as part of 232-H Deactivation, the Tritium Facility's Cryogenic Distillation Column, used to purify tritium used in nuclear weapons, was placed in cold standby. Cryogenic Distillation has been the means of purifying tritium for the weapons for the past 37 years. It separates the different isotopes of hydrogen, which are protium, deuterium and tritium. The Cryogenic Distillation technology has been replaced with hydride separations technology.

Award Received

The Defense Programs' SRS Tritium Hot Calibration Laboratory received the 2004 National Nuclear Security Administration (NNSA) Pollution Prevention Award for Environmental Stewardship, recognizing both its initiative and its success in reducing the amount of radioactively contaminated waste requiring disposal. NNSA Administrator Linton Brooks



SRS Tritium Facilities

presented the award to the WSRC Team during a visit to the SRS Tritium Facilities.

Also in FY04, a Scanning Electron Microscope was installed as a capability upgrade in the Inert Metallography Laboratory. This new state-of-the-art microscope has allowed surveillance examination of a system that had not previously been studied due to equipment limitations. This technology upgrade improves SRS's capability to support the national laboratories.

Protecting the Nation's Nuclear Deterrent

An important enduring mission at the Savannah River Site is to supply tritium, a radioactive form of hydrogen necessary for the nation's nuclear weapons stockpile, to the Department of Defense. The decay of existing tritium supplies requires a new source. For this reason, WSRC is building the Tritium Extraction Facility (TEF), which will be used to process materials irradiated in a Tennessee Valley Authority nuclear power reactor.

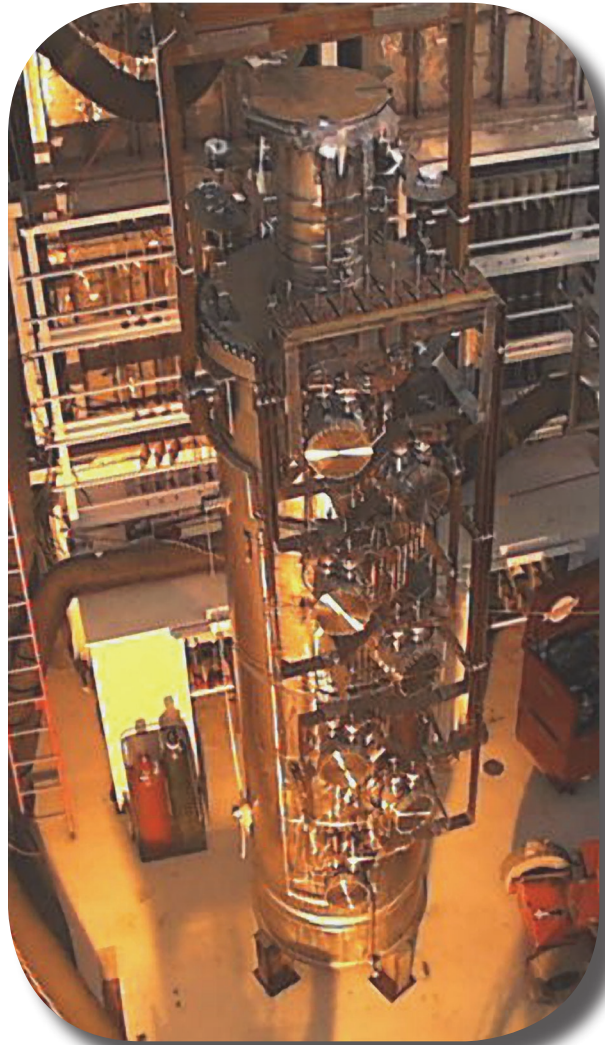
Since 1988, when the last production reactor at SRS ceased operation, the nation has had no source of new tritium. Current stockpile requirements have been met by recovering the gas from dismantled nuclear weapons and from routine tritium reservoir exchanges from the existing nuclear stockpile.

Construction of TEF began in 2000. Inert gas testing will begin in FY05 with normal operations expected to be authorized in FY07.

At the end of FY04, TEF was 83 percent complete. The Target Rod Preparation equipment, gloveboxes, furnaces and containment modules were completed and installed in the facility. Of 82 systems in the facility, 50 have been turned over to startup and are undergoing tests.

Control Room work was completed in September, and the Process Control System (among other items) was turned over by Construction. Construction also achieved mechanical completion of the Tritium Support Building.

WSRC is forecasting completion 10 months ahead of schedule.



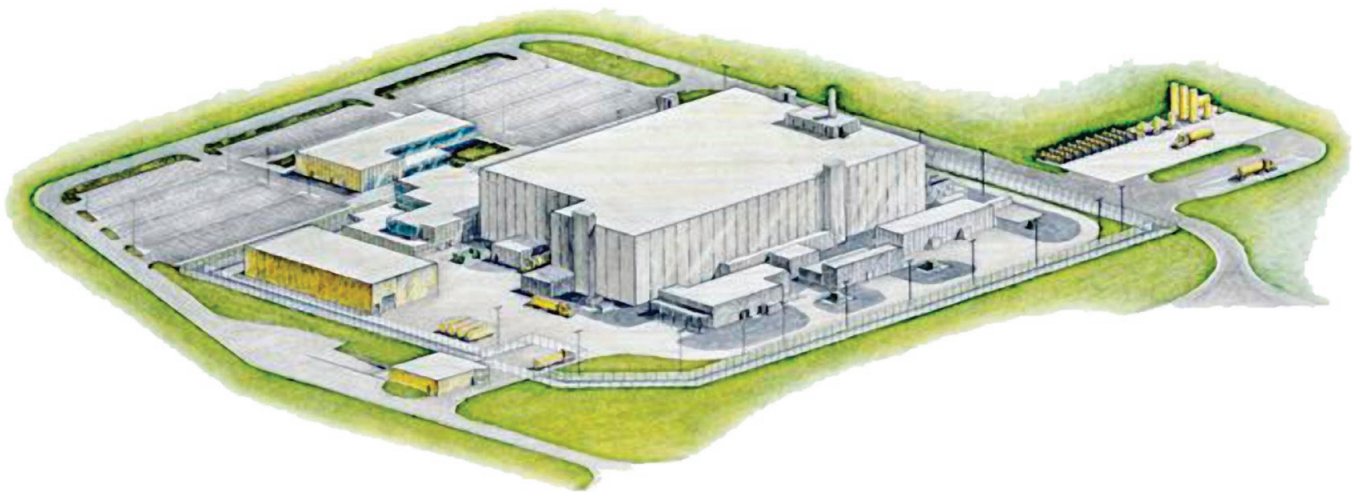
TEF Extraction Furnace in the facility's Remote Handling Area

Turning Surplus Weapons Material Into a Source for Energy

SRS has been designated as the site for the National Nuclear Security Administration's future plutonium disposition missions, which will convert surplus weapons plutonium to a fuel suitable for use in commercial nuclear power reactors.

The two key facilities will be the MOX Fuel Fabrication Facility (MFFF), which will blend plutonium oxide with uranium oxide to form a mixed oxide fuel, and the Pit Disassembly and Conversion Facility (PDCF), which will supply most of the feed for the MFFF by disassembling surplus nuclear weapons pits and converting the weapons-usable plutonium to oxide. WSRC provides the Design Authority function for the PDCF project and will eventually operate and maintain the facility. A consortium called DCS formed by Duke Project Services Group; COGEMA, Inc.; and Stone & Webster has a contract to design and license the MFFF, with future options to construct, operate, and deactivate the facility, as well as use the MOX fuel in Duke's commercial reactors.

- By the end of FY04, DCS was nearing completion of the MFFF design. Fuel production is expected to begin about 2009 and continue for approximately 12 years. Site clearing on MFFF is expected to begin in FY05.
- Development and testing of process equipment for the PDCF continued at Los Alamos National Laboratory.



The Future Mixed Oxide Fuel Fabrication Facility

Design work continues to progress on the Pit Disassembly and Conversion Facility. This design is being performed by Washington Group International.

SRS Recognizes Employees Serving In Military

Last year, SRS employees were recognized for their military service since the September 11, 2001, terrorist attacks on the United States.

While most service men and women were in attendance at a special ceremony, some were still on active military duty.

The event honored the 72 SRS employees and their families with a barbecue dinner and a patriotic program. In addition to the honorees and their families, those in attendance included local elected officials, business owners, community and civic leaders, and other SRS stakeholders.

The honorees were given plaques to recognize their “dedicated military service defending our country, our citizens here at home and in other critical locations around the world.”

Making the presentations were Jeff Allison, U.S. Department of Energy-Savannah River Manager; Bob Pedde, WSRC President; Gary Stanley, Bechtel Savannah River, Inc. Vice President; and Larry Brede, Wackenhut Services Inc.-Savannah River General Manager.

Also, Mr. Pedde received on behalf of WSRC the Seven Seals Award from Brigadier General Mitchell Willoughby, Assistant Adjutant General S.C. Army National Guard, and Luther Beason, S.C. Committee for Employer Support for the Guard and Reserve. The award is given to organizations that support its employees while they are serving on active duty.



SRS employees who are serving in the military were recognized for their service to the country

Working in Our Communities

Employee Volunteerism

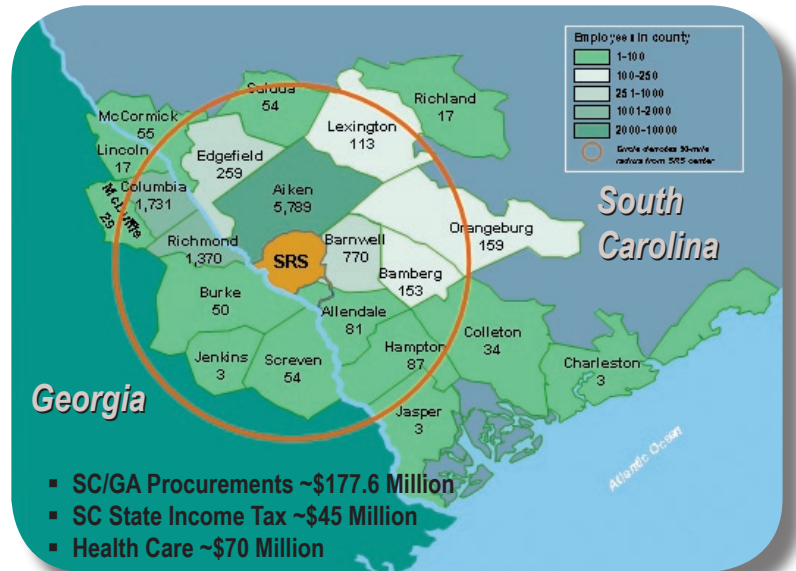
Last year, site employees continued to generously support the United Way, giving more than \$2.1 million—raising the amount given to the United Way to more than \$42 million since the mid-1950s. Also, additional contributions of more than \$12.6 million have been sent to communities through the WSRC corporate philanthropy program since 1989. During the year’s SRS blood drives, over 1,180 units of blood were donated. Employees last year donated the equivalent of 164,564 pounds of food in the Site’s Holiday Food Drive. Also, WSRC reached over 62,000 students the past year through various programs aimed to encourage learning, especially science and math. Finally, WSRC helped about 700 teachers with their classroom presentations.



SRS employees also give time to the community

Economic Impact

The site’s economic impact makes a significant contribution across the South Carolina-Georgia area. SRS employs more than 12,000 people, and the site’s overall budget is approximately \$1.6 billion. Of that, nearly \$1 billion is payroll. Last year, the site purchased over \$200 million in goods and services in South Carolina and Georgia combined. The site’s overall economic impact to the area is about \$2.4 billion a year.



Employees by county in South Carolina and Georgia

The WSRC Community Giving Program contributed \$650,000 last year to nonprofit and charitable organizations that support the arts, education and assist the community at large within the Central Savannah River Area.



The Savannah River Site is owned by the U.S. Department of Energy and operated by a Team of companies lead by the Westinghouse Savannah River Company.

WSRC is a wholly owned subsidiary of Washington Group International.



The WSRC Team: Westinghouse Savannah River Company LLC • Bechtel Savannah River, Inc. • BNFL Savannah River Corporation
BWXT Savannah River Company • CH2 Savannah River Company • Polestar Savannah River Company