

# SRS HERITAGE

SRS Heritage Foundation

April, 2010



## The Chairman's Corner

It seems that the older I become the more I appreciate the great history of the Savannah River Site, and the tremendous contributions of the thousands of employees who made it happen. This is simply a heritage that must be preserved. There is a lot to be learned from it.

Walt and I (mostly Walt) have been very busy since our last newsletter came out and we have some important goals for 2010 that you can read more about in this issue. We want to elevate our visibility in the area and grow our private and business memberships. There will be some important announcements soon.

We are also in serious preparation for a one-day celebration of the discovery of the neutrino at SRP. That discovery may be one of the most important in fundamental physics in the past century. It deserves our recognition and celebration. That celebration will occur at USCA August 27. You will definitely want to attend. Put it on your calendar.

Mal McKibben  
Board Chair

Neutrinos are coming!

### NO NEED TO DUCK!

Those elusive subatomic particles whose existence was first proved at SRS will be celebrated on August 27, 2010

Mark your calendars and stay tuned for forthcoming details.

In the meantime, read the article on page 3 about the experiments at Savannah River Site.

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### NEWSLETTER GOES ELECTRONIC

Welcome to the first electronic edition of the Heritage Foundation Newsletter. The Publications committee made the decision to go electronic after considerable discussion. The new format will permit the Foundation to get the news out more frequently and in more flexible formats while saving mailing costs and conserving our natural resources. Please tell us what you think about the change.



**THANKS TO OUR  
SRS HERITAGE  
FOUNDATION  
SPONSORS  
2009/2010**

The SRS Heritage Foundation is a relatively new organization but, thanks to our strong base of supporters, we are growing steadily. We are particularly pleased that several organizations have such faith in our future that they have made substantial financial contributions to get our programs started. Among these supporters are:

**Sponsors**

Savannah River Nuclear Solutions

**Corporate Members**

Savannah River Remediation, LLC  
Nuclear Fuel Services

**Small Business Member**

Security Federal Bank

*A special thank you to the individual members for their continued support the Foundation*

**JOIN THE  
SRS HERITAGE  
FOUNDATION  
TODAY!!  
WE NEED  
YOUR SUPPORT!**

**NORTH AUGUSTA HERITAGE WEEKEND**

The SRS Heritage Foundation will participate in North Augusta Heritage Days July 9 through 11, 2010 at the Arts and Cultural Center in the new Municipal Building on Georgia Avenue.

The weekend will focus on sharing and collecting histories of families, churches, schools and organizations. There will be an opportunity to have antiques appraised. Workshops will feature talks on how to preserve heirlooms and early North Augusta development. Walt will give a talk on the early history of SRS and the Heritage Foundation during these sessions. Several films of local interest will be shown. Mark Albertin will show "Displaced: The Unexpected Fallout from the Cold War" during this series.

The Heritage Foundation will have an exhibit on the second floor balcony from June 29 to August 28. We also plan to gather interviews for a second DVD covering the Cold War, the coming of the SR Project and the impact on surrounding communities on July 10th.

Mark you calendars now so you don't miss the special weekend of local history. This will also be a great opportunity to see the new Municipal Building, the Arts and Heritage Center exhibits and to walk through the Brick Pond Park below the Municipal Building.

What: North Augusta Heritage Weekend  
When: July 9, 10, 11, 2010  
Where: North Augusta Arts and Cultural Center

**CURATION FACILITY ADVANCES**

Renovation and retrofitting of Building 315-M for use as the Site Curation Facility has been accelerated. Funds allocated from the American Recovery and Reinvestment Act (ARRA) have shortened the timetable for completion of the Facility by more than a year. Major work includes roof replacement, enhanced fire protection and climate control upgrades. When complete, the Curation Facility will meet facility standards set by the National Historic Preservation Act and will accommodate both the Cold War artifact collection and the archaeological collection of the Savannah River Archaeological Research Program.

The Request for Proposals was issued March 11<sup>th</sup> and 23 firms sent representatives to the Pre-Bid conference March 23<sup>rd</sup>. Contract proposals are due April 14<sup>th</sup> and construction is to begin June 28<sup>th</sup> with a goal of achieving beneficial occupancy in November.

## NEUTRINO EXPERIMENTS AT SRS



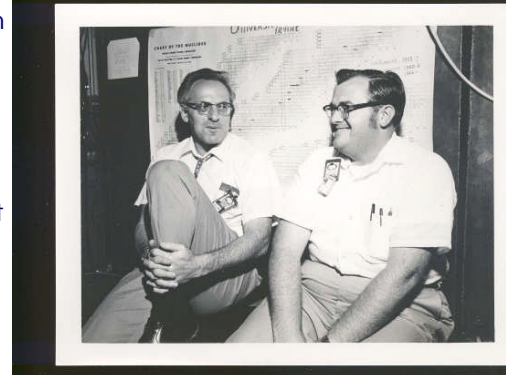
Neutrinos are very small, neutral particles given off during radioactive decay. Neutrinos can travel through the earth and out into space practically without being absorbed by another particle of matter!!! Neutrinos play an important part in theoretical physics and are dominant “actors” in our cosmos, both now and since the very beginnings of our Universe in the so-called “Big Bang”. Though they had been postulated in the 1930s, no one had found a way to prove the existence of anything so small and neutral. Dr. Frederick Reines, and Dr. Clyde Cowan had decided to hunt for neutrinos as early as 1947, but didn’t have a good place for their research.

The neutrino experiments in P-Reactor were planned as P was being constructed. Dr. Reines and Dr. Cowan realized that not only was a production nuclear reactor an excellent source of neutrinos, but the low background radiation in the Savannah River region would make an exceptionally fine “hunting ground” for their experiment to actually see neutrino interactions, and so prove the existence of the neutrino. The researchers traveled there from Los Alamos in 1955 and were able to provide conclusive results as quickly as June, 1956. (An earlier and similar experiment at the Hanford AEC plant was not sufficiently conclusive.) Although it was not recognized at the time, this research later earned them the Nobel Prize for Physics, in 1995.

Starting from the Hanford Reactor work, the neutrino experimental equipment evolved over time, but it was basically a tank containing liquid scintillator, observed by photomultiplier tubes. This tank was surrounded by a very thick lead shield to keep out gamma rays, from the reactor. Particle collisions produced gamma rays, which were amplified by the photomultiplier tubes and picked up by several cabinets of electronics. The distinctive “twin blips” given off by a neutrino interaction demonstrated that electron antineutrinos (the first type of neutrino discovered) existed. (In later such neutrino detection experiments, the lead shielding had to be augmented with surrounding water tanks to block neutrons from the reactor.)

Dr. Reines became founding Dean of the School of Physical Sciences at the University of California, Irvine, and was able to assemble a group of researchers who were devoted to neutrino physics. This group returned to Savannah River and began a series of ongoing experiments at P-reactor. The restart date of the neutrino experiments was in early 1960’s, and continued to 198 when the reactor was shut down. Dr. Henry Gurr and Dr. Henry Sobel were among the neutrino physicists, and each went on to contribute to the field. Some of the experiments conducted at the Savannah River Plant include Neutral Current Experiments, Evidence Of Neutrino Instability, and Neutrino Electron-Scattering.

Six different types of neutrinos have since been discovered, and it is believed on theoretical grounds, that there are no additional types. Research is ongoing even today. However, the experiments at P-Reactor on the Savannah River Site were instrumental in understanding the elementary particle and the universe itself.



## “DISPLACED” GOES TO SCHOOL

Eighth grade students in Aiken and Edgefield County schools soon will have an opportunity to learn about the dramatic displacements that occurred when 6,000 local residents were evicted in the 1950’s to make room for the coming of the Savannah River Site.

On February 17<sup>th</sup>, the SRS Heritage Foundation presented teaching packets and a video telling the story of the displaced communities to social studies teachers from middle schools in Aiken and Edgefield Counties. The 30-minute video contains recollections of former residents of the displaced communities and commentary by historians. It is illustrated with vintage photographs and accompanied by an original soundtrack.

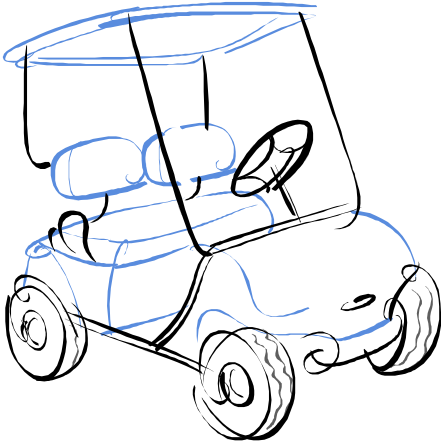
Videographer Mark Albertin became interested in the stories of the displaced communities and began collecting interviews with former residents at his own cost. The SRS Heritage Foundation learned of his efforts in 2006 and raised money to finance production of "Displaced" with a contribution from Fluor and a grant from Aiken County Parks Recreation and Tourism funds. The 90-minute edition of the video premiered to an audience of over 1700 in March 2009.

Bea Crawford led the Education Committee of the Heritage Foundation in creating a teaching packet to accompany the 30-minute education edition of the video. The packet includes reference to the appropriate South Carolina Curriculum Standards, an overview of the video, a suggested lesson plan for use with the video, a resource list for further study and background information.

Teachers who piloted the video and packet were enthusiastic about being able to use it in their classrooms. They described it as opening a window into a little-known aspect of local history. The video and teaching packets will be distributed to other CSRA schools in the near future.



## SRS HERITAGE FOUNDATION PARTICIPATES IN GOLF TOURNAMENT



It's not too late to join us for a day of fun at the CNTA Annual Golf Tournament. The Heritage Foundation is sponsoring a hole at the event and Paula & Walt will be volunteering at one of the beverage stations. So, get a team together and call Karen at the CNTA office, 649-3456 or email her at [cnta@bellsouth.net](mailto:cnta@bellsouth.net) to get all the details. CNTA has some great prizes and each player receives a beautiful golf shirt and stadium blanket, plus a chance to win a week at the beach! Deadline to sign up is May 4th, 2010