

SRS HERITAGE FOUNDATION

NEWSLETTER

September, 2016



Construction Nearing Completion

Phase 1 construction on the Museum building is making steady progress. After several months, during which a nearby resident said the Museum “looked like a hive”, work inside the building is nearly finished. Exterior work by Stuart Builders and their subcontractors has uncovered several surprises associated with working on the exterior of a 90-year-old building; the resulting cost and time increases will delay completion of the project.

The new fire suppression system is complete and has passed its pressure test. The only task remaining is to connect a new telephone line to the new fire alarm panel so the status of the sprinkler system can be monitored. The handicapped restroom is complete and ready for use. The new restroom meets current requirements of the Federal Americans with Disabilities Act (ADA) and has been approved by the City Building Inspector.

Exterior repairs to the former Dibble Library building have included replacing rotten wood in the soffit, restoring ornamental details, recoating the enclosed gutters and painting the new wood. The rusty metal security grates over the windows have been removed. However, unexpected wood rot has been found on window frames. The rot and removal issues with the lead-based paint will cause the total cost of the Phase 1 project to increase from \$121,000 to \$145,000 and will delay completion of the work.



See more photos on page 2

Fire Suppression System Installation



Outside and basement water line installation



Fire suppression heads installed and panel installed inside

1956 saw many important accomplishments and completions at SRS. Several of these are listed and briefly discussed below.

The most far reaching and significant was the proof of the existence of the atomic particle neutrino. Long theorized but never demonstrated this elusive particle was postulated as an explanation for an apparent loss of mass in some known nuclear transitions. When an isotope has an imbalance in its neutrons and protons the extra components will combine and or change in such a way that the isotope can achieve a state of balance and stability. This change gives off energy and small nuclear particles. Alpha and beta particles as well as gamma rays are the result of this process, but smaller particles are also released. Named for Enrico Fermi's little neutrons, neutrinos are these very small components of the neutron-proton structure associated with beta decay.

The neutrino was difficult to find. Its mass was estimated to be about 2% of that of an electron. It carried no charge so it was not attracted to matter. Once released it was estimated it could travel as far as 300,000 miles without striking another nucleus, literally out of the world and into space. The Atomic Energy Commission had been sponsoring studies since 1952 that led to the search for evidence that would validate the existence of the neutrino. This search led Drs. Cowan and Reines to the P-Area reactor in 1955. Earlier unsuccessful attempts had been done at Hanford and Los Alamos. The researchers arrived with trailer loads of the then state of the art electronics.



Dr. Clyde Cowan Jr. left, and Dr. Frederick Reines, leaders of the Los Alamos Scientific team that confirmed the existence of the neutrino at Savannah River's 105-P reactor, December 1955.

In June 1956 Reines and Cowan announced the discovery and identification of the first free neutrinos. This was commemorated with a plaque in the 105P reactor building and later by a commemorative sign in front of the Aiken Chamber of Commerce building on Richland Avenue. Reines would later be awarded the Nobel Prize for this outstanding accomplishment. Their work and research continued at P Reactor under the sponsorship of the University of California until the reactor was shut down in 1988.

A critical national defense need was also answered by SRS with the startup of the 232-H Tritium facility. The original design of the site provided for a limited Tritium production in the f-Area facility. However with the remarkable and frightening success of the thermonuclear weapons tested in the early fifties the AEC quickly ordered large increases in the amount of Tritium that would be necessary to meet defense needs. 232-H started up and within a year had doubled its production output. This national need continues to be met today with the processing of Tritium at the SRS.

Gerhardt Dessauer of the SRL (now SRNL) was awarded a patent for his Nuclear Test Gage. The NTG greatly improved the way fuel and target assemblies could be tested. This allowed for a more rapid and imaginative development of various fuel and target assemblies. This in turn provided the capability to produce a wide variety of nuclear isotopes for application in many different peaceful uses.



L to R: Ronnie Young, Walt Joseph, Lester Welch, Fred Cavanaugh, and David Jameson at the unveiling of historic marker at the Neutrino Celebration on August 27, 2010.

Reactor safety was improved with the introduction of the Supplementary Safety System that allowed operators to shut down a reactor even if the safety and control rods did not drop into the reactor core.



The H Area tritium facility, just after completion. No equipment was installed in the building, when first completed. After initial experience was gained in the F Area facility, improved equipment and processes here would make the F Area facility obsolete.

SRS Nominated for National Historical Chemical Landmark



The local chapter of the American Chemical Society (ACS) has nominated the Savannah River Site production of Plutonium-238 for space exploration as a National Historical Chemical Landmark. The Manager of the ACS National Chemical Landmarks Program recently responded to the nomination, saying that the reviewing committee recommended approval of the nomination to the final reviewing body. The response letter cited the “significant impact of the program on unmanned space exploration”. A final ACS vote on the nomination is expected in December.

If the nomination is approved, the Landmark designation will be celebrated with a ceremony, a historical plaque and production of a commemorative booklet in 2018 in conjunction with the ACS Southeastern Regional Meeting. The SRS Heritage Foundation has volunteered to host the ceremony and plaque at the SRS Museum.

Public Tour Registration Continues



Registration is continuing for the SRS 2016 Tour Program. Free tours are scheduled twice each month through December. Tours begin at 12:30 pm at the Aiken County Research Center, located off Highway 278 near New Ellenton. Each tour lasts approximately 2 hours. Applications for a tour may be made at: www.srs.gov/general/tour/public or at 803-952-9472.

Sculpture Fabrication in Progress

“The Atom in Space” original sculpture is taking shape in David Cianni’s workshop. The large metal sculpture consists of a symbolic atom atop a replica of a multi-stage rocket to commemorate SRS production of Plutonium-238 that provided power for US exploration of our solar system from 1969 to the present time. The completed sculpture will be 15-feet tall and will be lighted and placed at the south end of the Dibble building adjacent to Hoods Lane. The sculpture will be installed as soon as exterior repairs to the building are completed.

Another potential commemoration of the SRS role in producing Plutonium-238 for the space program is included in the article on the National Historical Chemical Landmark nomination in this issue.



“Atom in Space” sculpture being fabricated in David Cianni’s workshop

Preliminary Exhibit Designs

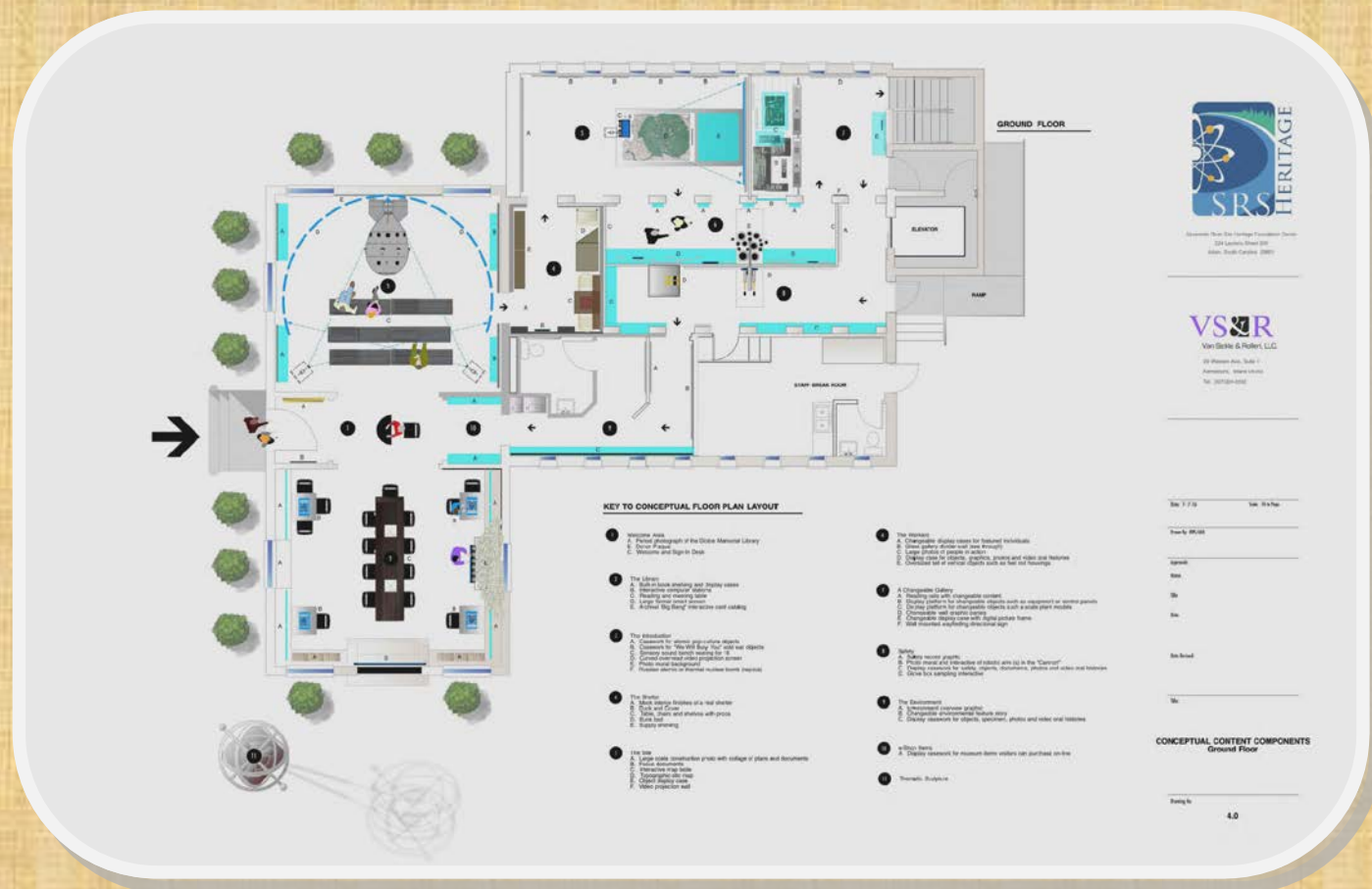
Preliminary designs for SRS Museum exhibits are being developed by the firm of Van Sickle and Roller (VS&R) in Kennebunk, Maine. VS&R is well acquainted with the Savannah River Site through having worked with the Heritage Foundation to develop exhibit designs for a proposed building at SRS in 2007. VS&R has developed a proposed floor plan for the first floor of the Museum to maximize use of the space available in the building. The floor plan divides the space into 10 galleries, each dealing with a specific topic. The galleries are listed below in the order they will be seen by a visitor:

Welcome Area
The Introduction
The Site
A Changeable Gallery
Safety
The Environment

The Library
The Fallout Shelter
The Workers
Safety
E-Shop Items

Specific exhibits are recommended for each gallery and artists renderings area being created for several of the exhibits. The proposed floor plan and a drawing of the Introduction Exhibit, to be located in the north end of the Dibble building, are shown below.

Detailed design and fabrication of the exhibits will begin after all building modifications are complete, including the elevator and stairwell, permitting public access to the second floor. In the meantime, the designs show the Foundation vision of a small, highly-interactive facility providing an educational and enjoyable experience for our visitors.



Retiring SRNS President Tours Museum

Carol Johnson, President and CEO of Savannah River Nuclear Solutions, LLC and her husband, Mike, Executive Director of Citizens for Nuclear Technology Awareness, were given a special tour of the SRS Museum September 16th. Mrs. Johnson had requested the tour to take place prior to her retirement. The Johnsons were welcomed to the Museum by several members of the Heritage Foundation Board of Directors and Steering Committee.

Board Chair Joe Ortaldo presented a copy of the book, Savannah River Site at 50, with a frontispiece recognizing Carol Johnson's enthusiastic leadership in support of the SRS Museum



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LIKE US ON FACEBOOK! We will be posting news and tidbits during these exciting times of Foundation progress. The SRS Heritage Facebook page is open for business. Please join us at <http://www.facebook.com/srs.heritage>. And don't forget the news and archives at the website, <http://www.srsheritage.org/> or check out the srsmuseum@aikencountysc.gov

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This membership is valid through December 2016

| |
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My check, made out to the SRS Heritage Foundation, Inc. is enclosed. Contributions to the Foundation are tax exempt. Federal ID#20-1629370

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