



SRS Heritage Foundation

NEWSLETTER

May, 2014

Foundation Helps LEAP Into History

Heritage Foundation members recently met with LEAP (Leadership Emerging Among Professionals) representatives to discuss the history of the Savannah River Site. The May 7th event was titled “Meet the Grandparents” day and was held at the Applied Research Center. LEAP is a peer-led organization whose members are full-time employees at SRNS and who have earned at least an Associate Degree within the past seven years. Many LEAP members have worked at SRS for less than two years so they may not be familiar with the history of the Site.

Walt Joseph opened the meeting with a brief overview of SRS history and accomplishments. He said, “We, your grandparents are proud of our legacy and we look to you to continue the valuable work and missions for our country”. Foundation members joined the LEAP employees for animated discussions during lunch. After the meeting, LEAP member Brittany Williamson said “There are many great resources out there for learning about the legacy of SRS but talking to SRS retirees today during the roundtable discussions brought the history of SRS to life. It’s given me a new appreciation for all the work they accomplished and it really put the Site’s impact on the community into focus.”

Photo...Joe Ortaldo, Foundation Board Chairman, discusses SRS with LEAP members



Liquid nuclear waste is categorized as high level and low level based on the degree of radiation it emits. High level is defined as emitting between 0.5 and 5 BTU per hour per gallon. The heat is generated by decay of the radioactive elements contained in the waste. Planning for the storage and management of the wastes that would be generated were a priority during plant construction. The first waste tanks were turned over to operations starting in the summer of 1954 (just about sixty years ago). One of the engineering standards used was the requirement that gravity be used to ensure the proper flow of the liquid waste. It was recognized that the waste management planning and processes were to provide a semi-permanent storage and that eventually the waste would have to be treated and safely disposed of in an environmentally sound manner.

Initially the plan called for tanks to be located in only one of the two separations areas. This would have entailed the extensive use of transfer piping to transport the wastes literally miles between the F and H Separations Areas. This approach was soon abandoned when on closer inspection it was realized that the amount of encased transfer piping necessary and the complexity of the design/construction would not be practical. Accordingly each of the separations areas was built incorporating its own Waste Tank Farm. In later years an inter-area transfer line was completed for economy and improved waste tank space utilization.

The first tanks constructed were built in F Area using the experience gained at Hanford and incorporating some improvements. These tanks became known as Type I and featured cooling coils to control and dissipate the heat generated by decaying high level waste. The welds needed to construct these carbon steel tanks were extensive and required detailed examination of each and every welded seam. Pittsburgh Testing Laboratory examined and certified about 50,000 feet of tank welds between February 1952 and August 1953. Tanks were built using a saucer approach and placing a tank within a tank or catch pan. The soil and site preparation was critical. Site preparation factors were elevation to insure gravity flow from the process buildings into the tanks and soil strength and permeability. The Type II waste tanks were placed in H-Area.

They incorporated many improvements learned in the Type I construction and changes made based on research in the Savannah River Laboratory. These included forced tank air ventilation. The Type IV tanks were built in F-Area. These single walled tanks were used only for low level liquid waste and were more economical to construct and maintain.

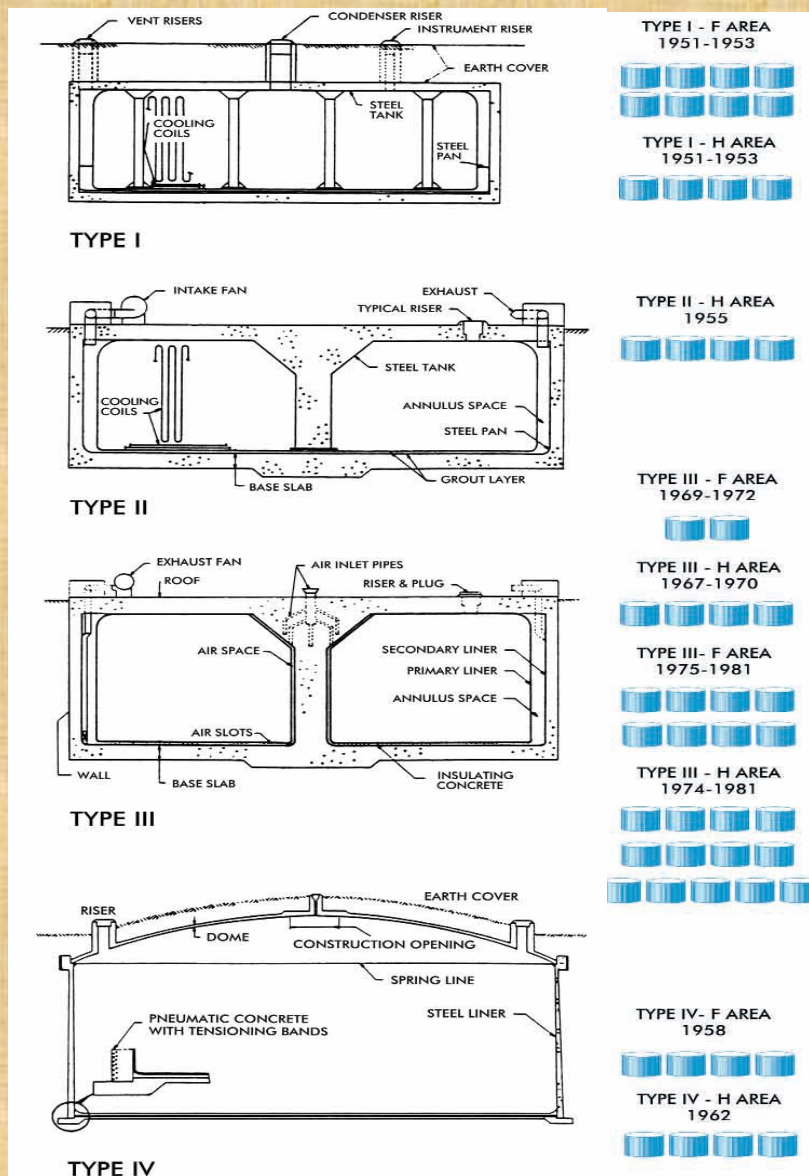
These early waste tanks served well until the late fifties. Then some leaks and cracks were discovered. The leaks were controlled to minimize the environmental impact by tank liquid level management. They subsequently self-sealed by salt solids deposited during waste processing for space gain and tank management. Based on these experiences the DuPont Atomic Energy Davison commissioned an in-depth examination and determined that stress corrosion cracking was the source of the leaks. This resulted in the design and construction of the Type III tank. The Type III has become the standard used today. The most significant feature of the construction process for the Type III tank is the requirement that the completed tank be heat treated to a temperature of 1100 degrees Fahrenheit. This relieves any remaining stress in the steel and welds thereby eliminating the potential for cracks developing. The figure shows the Waste Tank Types and Chronology. (see the diagram on page 4)

Over the years of operation Waste Management has made many improvements. These include evaporation of liquid wastes to minimize space needed for storage. A process for the vitrification of high level waste is now operating in the DWPF (Defense Waste Processing Facility). The DWPF process incorporates high level waste into an essentially non-leachable borosilicate glass and encapsulates it into stainless steel cylinders. These cylinders are stored onsite and await ultimate disposal.

Solid nuclear waste management utilized burial grounds. The solid wastes included protective clothing, trash, and numerous contaminated pieces of machinery, tools and equipment. These wastes were all low level. The Burial Ground was placed between the F and H Separations Areas. Wastes were boxed and/or placed in plastic and then buried in engineered trenches. The Burial Ground and other solid waste topics will be discussed in future newsletters.

SRS at Sixty...continued

By Art Osborne



Dwayne Wilson Leaving SRNS

Dwayne Wilson, President and CEO of Savannah River Nuclear Solutions, will be leaving his present assignment and moving to Fluor Corporate Headquarters in June. Dwayne has been a staunch supporter of the SRS Heritage Foundation and currently is Chairman of the Aiken Together capital campaign which is raising money for the Center for African-American History, Art and Culture; the Aiken Visitors Center and Train Museum; and the new SRS Museum. Dwayne's enthusiastic interest in history, particularly the heritage of the Savannah River Site, will be missed. We wish him continued success in his new assignment.

Carol Johnson will replace Dwayne at SRNS. She brings broad experience to the new assignment with more than 30 years of experience in the nuclear industry. She worked at Savannah River from 1994 to 2004 and also has served at Hanford, Los Alamos National Laboratory, Idaho National Laboratory and Sellafield in the United Kingdom.

ASM International Names SRS a Historical Landmark



AIKEN, S.C. May 13, 2014 – Joining a list that includes structures like the Statue of Liberty and the Eiffel Tower, the Department of Energy’s Savannah River Site has officially been named a Historical Landmark by ASM International, the professional society for materials science and manufacturing.

SRS is one of only three landmarks designated from the current year’s class of nominees. ASM historical landmarks identify sites and events that have played a prominent part in the discovery, development and growth of metals and metalworking and engineered materials.

The designation became official with the presentation of a historical marker, presented by Professor Ravi Ravindran, current President of ASM International. Ravindran noted that the award recognized SRS “for advancing the materials technologies necessary to produce tritium, plutonium and

other isotopes for national defense, research and medical applications.”

Ravindran cited several contributions over SRS’ history, including large scale production of aluminum-lithium alloys; production of kilogram quantities of radioactive waste glass; materials science improvements made at SRS through the U.S. tritium program; and, discovery of the neutrino, a Nobel Prize winning experiment conducted at the P Reactor.

Savannah River National Laboratory Director Dr. Terry Michalske joined Ravindran at the marker presentation, acknowledging that the listing validated the work of people who contributed over decades of research, development and execution. This is really a tribute to the can-do spirit of a lot of people who looked at things and said ‘we can do that,’ Michalske said. “That’s as true today as it’s ever been, and it’s a fitting recognition for the quality of work that’s been done here.”

The marker will be permanently placed near the former M Area facilities, where fuel and target assemblies were once produced for the site’s production reactors.

The nomination was submitted by Dr. Elizabeth Hoffman of SRNL and Dr. Elliott Clark, formerly of SRNL, on behalf of the Savannah River Chapter of ASM.



Manhattan Project National Park Moving Forward

Plans to create the Manhattan Project National Historical Park are moving slowly through Congress. An Act to create the Park was included as an amendment to the House FY 2015 National Defense Authorization Act and is expected to be considered by the House by June. Sponsors expect Senate consideration of the bill in the fall and are “cautiously optimistic” that Congress will pass the legislation to establish the National Park by the end of the year.

In Memorium - Bea Crawford...1935-2014



Beatrice Ann Crawford died in Gaithersburg, Maryland on April 22, 2014. Bea was the widow of Dr. Todd Crawford, one of the founders of the SRS Heritage Foundation, and she served as a member of the Foundation Board of Directors for many years after his death. Bea and Todd were born in California and came to Aiken in 1972. Bea taught in the South Carolina school system for many years and was active in civic programs in addition to the Foundation. She was particularly interested in education and led the Foundation program to distribute copies of the “Displaced” video to middle schools around the CSRA. She moved to Gaithersburg in 2012 to be nearer the families of two of her children. She will be remembered by those who knew her for her eagerness to contribute and her winning smile.

Bea’s friends are invited to meet the Crawford family from 7:00 to 9:00 pm on Wednesday evening, June 11th, in the top floor of the Aiken Brew Pub. A memorial service for Bea will be held in Aiken at 11:00 am on Thursday, June 12 in Saint John’s United Methodist Church, 104 Newberry Street. The service will be followed by a reception at Saint John’s.

The SRS Word List

It’s safe to say that any SRS employee who wrote reports as part of the job remembers the SRS Word List. The first Word List was published in 1958 describe the use of the hundreds of picturesque words and expressions invented to describe new devices and processes created for the atomic energy business. The List was revised periodically when new terms came into use. A 1961 article in the Savannah River Plant News described the current revision and quoted Jack Gregory, Area Supervisor in the Technical Procedures Office, as saying the atomic energy industry “generates new words as easily and almost as rapidly as it splits atoms”.



Each list not only contained words and acronyms unique to the Site but also provided guidance on proper spelling, capitalization, hyphenation and usage. A quick study of the entries under “R” (selected arbitrarily) in the 1997 edition of the Word List revealed 158 approved abbreviations and acronyms; the Site accumulation of acronyms is well-remembered. Terms listed under “R” included rabbit, ramshorn, Raschig ring, redox, rooftop ratio and rep.

Unfortunately, the Word Lists did not define listed terms. Many of these definitions are buried in other reports and in the memories of those who used them.

Academy Hears Savannah River Story

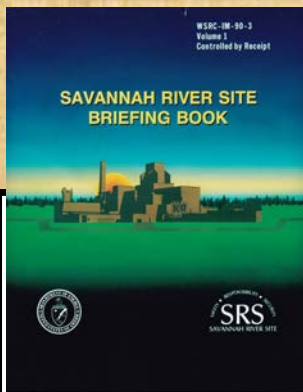
The Curriculum Committee of the Academy for Lifelong Learning requested the SRS Heritage Foundation to develop and teach a class on SRS history to the Academy. The Academy is a self-supporting group affiliated with the University of South Carolina Aiken Continuing Education Department. The Academy mission is to provide continuing education opportunities for mature individuals in the CSRA. Carl Fields, a member of both the Academy and the Heritage Foundation, acted as liaison for the project.

Four 50-minute talks on various aspects of the Site were developed by Art Osborne and Walt Joseph of the Heritage Foundation and were delivered on successive Tuesdays in March.

March 10	Nuclear Science to 1950
March 17	Building SRS
March 24	Site Impact on Communities
March 31	Site Contributions

Each talk was attended by about 30 Academy members.

A Feedback Questionnaire was distributed to attendees after the March 31 session. Feedback from the 23 responders was very positive and many requested more information on current programs and the future of the Site.



Site Briefing Books Donated to Foundation

Three large Briefing Books, containing photographs and fact sheets, were donated recently to the SRS Heritage Foundation. C. Russell Shearer of Alexandria, Virginia sent the Books to Joe Ortaldo, Chairman of the Board of the Heritage Foundation. Mr. Shearer received the volumes while he was performing legal services for the Department of Energy during the 1990's. The three loose-leaf binders contain about 160 photographs of SRS buildings and areas, including environmental sites. Numerous Fact Sheets describing buildings, areas and processes are also included.

Contents of the Briefing Books will be catalogued and the material is expected to be very useful in creating exhibits for the new SRS Museum.

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We are please to recognize our sponsors who have made substantial contributions to Foundation programs.

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*A special thank you to the
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**JOIN THE
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TODAY!!
WE NEED
YOUR SUPPORT!**

Time To Renew!!

2014 is a **SPECIAL YEAR!** The SRS Heritage Foundation has a building... a building in Aiken for a museum! Our mission to preserve and present the heritage of the Savannah River Site has come to fruition.

We need you to renew your membership to help us go forward to continue preserving the history of SRS and making it available to all.

Your continuing membership is **very** important to the Foundation. Financial support helps us with projects to preserve Site history. But, **numbers** of members are also important to establish a broad base of support and to show to government entities and other sponsors that the Foundation represents a strong segment of the population.

The membership term is on an annual basis running from January through December of each calendar year. The SRS Heritage Foundation is a 501(c) 3 non-profit organization open to all individuals, businesses and corporations. Membership dues are tax deductible for federal income tax purposes.

Please renew your membership and continue your support of the SRS Heritage Foundation as it moves to a new level of meeting our mission. Complete the membership form and mail it to:

SRS Heritage Foundation
P. O. Box 2226
Aiken, SC 29802

The membership list is confidential and is not released or sold.

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/>.

**DON'T MISS OUT ON ALL THE GREAT NEWS AND EVENTS
THAT ARE COMING....JOIN TODAY...(use this form to become a member)**



SRS HERITAGE FOUNDATION MEMBERSHIP APPLICATION

I would like to become a member of the SRS Heritage Foundation in the following level. (Please Check One)

<i>Benefactor</i>	<i>\$120.00</i>	<input type="checkbox"/>
<i>Patron</i>	<i>\$ 60.00</i>	<input type="checkbox"/>
<i>Sustaining</i>	<i>\$ 35.00</i>	<input type="checkbox"/>
<i>Student</i>	<i>\$ 15.00</i>	<input type="checkbox"/>
<i>Small Business</i>	<i>\$ 250.00</i>	<input type="checkbox"/>
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*I would be willing to help with Publications____, Membership____,
Fundraising____, Publicity____, other____*

This membership is valid through December 2014

Name:
Address:
City, Zip Code:
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Email (s):
Fax #:

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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