

A brief history of the UT-AEC Agricultural Research Laboratory - Introduction

(As published in The Oak Ridger's Historically Speaking column on October 20, 2009)

Much of this *Historically Speaking* series comes from information contained in *UT-AEC Agricultural Research Laboratory* booklet published by the University of Tennessee Agricultural Experimental Station that operated the University of Tennessee/Atomic Energy Commission Agricultural Research Laboratory for the U. S. Atomic Energy Commission. The large facility was located on the southeast boundary of the Oak Ridge government reservation and functioned from 1948 until 1981.

Additional information was taken from J. Merrill Bird's Master of Science thesis at the University of Tennessee in 1952, provided courtesy of Bob Reynolds. Merrill Bird was the first top manager for the unique joint experimental effort of the University of Tennessee and the Atomic Energy Commission.

Other significant assistance was provided by Joe Lenhard and Bob Reynolds. Joe encouraged me to tell the history of this unique and historic experimental research operation and arranged to show me the remaining historic relics and facilities. Bob Reynolds worked at the UT-AEC Agricultural Research Laboratory later to be known as the Comparative Animal Research Facility (CARL) from 1954 to 1975.

Joe was the government safety officer responsible for the safety oversight of the operations of the research laboratory. Joe later became the federal manager responsible for oversight of the Oak Ridge National Laboratory. He came to work at Oak Ridge for the Atomic Energy Commission in 1957, worked for the Energy Research and Development Administration (that existed from January 19, 1975 to October 1, 1977) and retired from the Department of Energy's Oak Ridge Operations in 1990.

Joe has seen many changes take place in Oak Ridge and the federal government's presence here over the years. He is one of Oak Ridge's icons and since retirement works tirelessly in support of the American Museum of Science and Energy, the East Tennessee Economic Council, the Community Reuse Organization of East Tennessee and various other vital interests of Oak Ridge. He is one of our primary champions of Oak Ridge's history and is personally dedicated to helping create our future.

Bob came to the UT-AEC Agricultural Research Laboratory as an employee of UT in October of 1954. But before he arrived here he had experienced a most unusual career in the U. S. Air Force.

This life changing experience happened when Bob was a 2nd Lieutenant in the United States Air Force. In 1952, he was assigned to Task Group 132.1 of Joint Task Group 132 with headquarters in Los Alamos Scientific Laboratory. He was given orders to report to Travis Air Force Base where he would "depart by 1 October 1952."

While his orders did not specify where he would depart to, ultimately he was among those military personnel in the joint task group to witness atomic bomb tests at Eniwetok atoll in the Marshall Islands. Specifically he observed *Operation Ivy*, the first explosion of a thermonuclear weapon, *Mike*. This explosion, replaced the island of Elugelab with more than a mile-wide crater over 160 feet deep.

A 28-minute video of this atomic test that can be viewed at: http://www.archive.org/details/operation_ivy

Bob still recalls the huge display of enormous power of the world's largest atomic bomb tests at the time. There was also a second test of a pure fission bomb (King) that was the largest such explosion ever. Operation Ivy was an event that military personnel were proud to be involved. It was literally the cutting edge of nuclear weapons technology.

As Bob described for me the experience he had in this task group, I was convinced that he considered himself fortunate to be among the individuals selected to participate in this history making event. Bob continued to work with radiation for a large part of his working career. The work he did with the UT-AEC

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Agricultural Research Laboratory and later the Comparative Animal Research Laboratory kept him on the cutting edge of nuclear technology.

When Bob left the research laboratory after 24 years to join the UT Animal Science Department on July 1, 1978, he had contributed to 21 publications within the previous five years, was the Assistant Superintendent of the UT-AEC Comparative Animal Research Laboratory and had developed extensive and innovative research protocols for radiation related livestock experiments.

A letter of introduction in his new assignment noted his extensive experience in livestock management and recognized his value as a researcher. He left during a time of extensive upheaval of funding and deliberation regarding the laboratory's future.

When Bob arrived in 1954, he moved his family into a beautiful old home located at 806 Bethel Valley Road near the intersection of Bethel Valley Road and Kerr Hollow Road. The house was located along with four others near the large shade trees still standing just south of the newly constructed Oak Ridge Baptist Church on this historic site.

Bob and his family's home was one of five white frame construction houses located on this picturesque spot. I believe at least four of these houses were moved there after 1948, when the AEC and UT formed the Animal Research Laboratory. Bob tells of the joyous times his family had living in this location. Living here on the grounds of the research laboratory enabled Bob to be close to the animals and to more easily tend the livestock. In turn he received his home rent free.

Another individual who lived in that unique group of old homes was H. E. Walburg, the top manager when the UT-AEC Animal Research Laboratory was transferred to Oak Ridge Associated Universities on October 1, 1981. He had been appointed in 1973 and given the charge to convert the agricultural focus of the research facilities to "animal cross species comparisons aimed at extrapolating experimental animal data to man for radiation effects."

This change in purpose evidently resulted in the changing of the name from Agricultural Research Laboratory to Comparative Animal Research Laboratory. While I can't yet pin down the exact date of the name change, sometime between 1973 and 1978 seems most likely.

An interesting note regarding Walburg's move into the house at 822 Bethel Valley Road is that an "Ask Inky" column in The Oak Ridger, published on December 11, 1978, questioned the apparently extensive work being done on the house and several other actions regarding the move. All actions were explained in the answer provided and the use of a government vehicle to move Walburg's belongings was admitted as inappropriate use of government property.

Another indicator of the controversies obviously plaguing the CARL operation was a fable titled, "*The Kingdom of CARL*," written with obvious frustration at the manner in which staff reductions had been required and the transition of the program from UT to Oak Ridge Associated Universities.

A section of that fable reads, "Once upon a time not too very long ago in the country of Tanacity near the town of OLFRIDGE there was a tiny kingdom called CARL, which was ruled by a very stern king named WALFRED..."

The fable continues, "...As times became harder, an effort was made to save the kingdom by merging it with a neighboring kingdom called OLDROW. The population was led to believe that this venture would save the kingdom and good times would return once more to CARL..."

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Finally the fable concludes, "...In the end some people gained but many also lost. It will take time for the scars to heal and for those who remained to see if those who left were wiser than those who stayed. King WALFRED himself became a servant to another king. And the *Kingdom of CARL* was no more..."

These beautiful old houses on this picturesque location were removed in 1982. Changes were obviously being required as this program struggled for funding and continued purpose.

Another "Ask Inky" article published in The Oak Ridger of June 16, 1983, provides further insight. The questioner wants to know the status of CARL and how it had changed since becoming a part of ORAU on October 1, 1981. The response provided states, "On March 1, 1983, the Comparative Animal Research Laboratory was made a part of ORAU's Medical and Health Sciences Division to provide closer collaboration between the CARL and MHSD staffs..."

The response continues, "...The former CARL building was renamed the ORAU Scarboro Facility...reduced funding produced forced some layoffs and a consolidation of administrative practices...These constraints also required selling off cattle and farm animals that were no longer needed in the scientific programs..."

Finally, the response recognizes that, "...There were 62 CARL personnel who transferred to ORAU when ORAU assumed the contract in October, 1981. Of that total, 28 persons are still working at ORAU, most of them in the Medical Division's Field Site..."

The most telling comment in the response was, "...The Scarboro Facility has been partially renovated, and now serves as home base for the Radiological Survey Program of ORAU's Manpower Education, Research and Training Division and ORAU's Office of Safety and Health as well as the MHSD Field Site."

Yep, the fable was right, the *Kingdom of CARL* was no more!

Next we will examine the details of the historic UT-AEC Agricultural Research Laboratory. We will look at its original mission to study the herd of cattle that were exposed to radiation as a result of the July 16, 1945, Trinity atomic blast near Alamogordo, New Mexico. This world's first nuclear explosion resulted in the unique first opportunity to monitor the cattle to determine the potential harmful effects of exposure to radiation.

We will see the expansion of this most unusual farm-based research laboratory mission to include other animal experiments, other radiation related experiments on plants and seeds. We will also examine a radiation accident that occurred on February 4, 1971 at the Variable Dose Rate Irradiation Facility when an employee was exposing seed to radiation from a Cobalt 60 source.

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Robert (Bob) Reynolds, UT-AEC Agricultural Research Laboratory/Comparative Animal Research Laboratory Assistant Superintendent



Picturesque AEC homes were located just north of the shade trees near the location of the Oak Ridge Baptist Church's new building

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Jones home built in 1923 is now the offices of Life Development Center near Haw Ridge Park and is the only remaining example of the UT-AEC Agricultural Research Laboratory homes