

## Y-12's second era grows

The successful manufacture of nuclear weapons components accomplished using the Los Alamos developed technology for machining natural and enriched uranium was by 1948 a mainstay of Y-12's second era. The site was fast becoming a large machine shop for uranium machining.

This mission has remained the main function of Y-12 over the years. Many other accomplishments have come and gone, but the uranium mission has remained in the forefront of all others. As early as 1948, there were multiple programs developing on the Y-12 site.

The employee population was starting to rise again. Exciting things were happening. New ideas abounded and hope was restored. Y-12 was not going to fade away after losing the uranium separation mission.

The newly designated Oak Ridge National Laboratory was fast becoming a multi-faceted laboratory and sorely needed more space. Y-12 had huge buildings and nothing happening in them. A natural pattern emerged whereby the laboratory would create programs of research and rather than build new facilities at the X-10 site, they would occupy buildings at Y-12.

Some of the first buildings to be taken over at Y-12 by the laboratory functions were the Biology Complex buildings. Originally built as a part of the Manhattan Project as uranium chemical processing buildings, they were soon converted to research. Here is where Bill and Liane Russell as newlyweds were enticed by Dr. Alexander Hollaender to come and work in the newly established Biology Division of the Oak Ridge National Laboratory.

In Oak Ridge, they worked jointly to start a new research career and created a world renowned mouse based research facility. They were soon publishing findings based on huge numbers doing what Dr. Alvin Weinberg called "Big Biology" as he often used the term "Big Science" to define experiments that could only be done effectively on a large scale by the government in national laboratories.

By 1948 the Stable Isotope work was continuing to grow in Building 9731. Support had grown for this work as the Atomic Energy Commission continued a commitment from the Manhattan Engineer District's A. V. Peterson that began in early 1946. At that time Eugene P. Wigner of the Clinton Laboratories (changed to Oak Ridge National Laboratory on February 1, 1948), had discussed the possibility of using Y-12's calutrons to supply usable quantities of enriched isotopic materials for basic and applied research.

In a letter from Wigner to Peterson, Wigner said, "I am writing to you to review some of the things which were brought out in our conference with your and Drs. McDaniel and Aebersold. In our opinion the work now being done at the Y-12 Plant is and promises to continue to be scientifically one of the most important project now under way in this country."

Wigner continued, "We should have, as the very basis of future work in nuclear physics and chemistry, knowledge of the various cross-sections of pure stable isotopes. Eventually separated isotopes of the elements may provide invaluable raw material for the production by pile or other irradiation of radioisotopes of value in science, medicine and industry. Since we believe that the stable isotope program at Y-12 is today scientifically more important and soon will be more important on every count than the uranium isotope separation, we wish that greater emphasis could be placed on it."

Peterson replied, "As you no doubt are aware the District has held discussions, in line with the comments made in your letter, and you will be glad to know that Dr. Clarence Larson has been placed in charge of the overall stable isotopes program at Y-12. Both he and Dr. Keim, who supervises the electromagnetic phase, are enthusiastic about the program and will promote it as full as possible."

This formal exchange was the result of discussion that took place during late 1945 and early 1946 between the Electromagnetic Process Improvement staff of the laboratory (Clinton Laboratory at the time) and Dr. Paul W. McDaniel. Dr. McDaniel was primarily responsible for the initiation of the stable isotope separation effort.

In a separate communication exchange between Dr. McDaniel and Dr. Keim, McDaniel asked Kiem how long it would take to separate all the known elements into their various isotopes. Dr. Keim replied that it might be done in a dozen years. McDaniel indicated he would assure the support was maintained for the program and that if anyone ever tried to stop it, Keim was to contact him directly.

Dr. McDaniel obviously knew the value of the stable isotope program and the resulting medical, research and diagnosis that might come from this effort. Through the early years of this program, his support was a valuable resource that not only kept the program going, but grew it to the point that Building 9204-3 calutrons were converted to separating stable isotopes.

Oak Ridge was gaining momentum on all fronts in 1948. The Atomic Energy Commission was bringing more and more work to the Oak Ridge Operations Field Office.