

A calutron stool appears and more

There were nine major buildings constructed at the Y-12 National Security Complex that were originally used to house the 1152 Calutrons (named for the **California University** cyclo**TRON** and designed by Ernest O. Lawrence of the Radiation Laboratory at the University of California at Berkeley). Five of these buildings were designated "alpha" buildings and four were designated "beta" buildings.

All nine of these original Manhattan Project structures are still standing today and most are still being used to support Y-12 missions. One has been idle for over 40 years and still has the Cold War equipment from the Colex process inside the structure. One has recently been vacated. A couple of them are being decommissioned after years of service and are now used primarily for storage. Two more are used primarily for offices and some storage.

With one exception, the remaining original Manhattan Project buildings have been modified extensively over the years and are still in heavy use supporting Y-12's primary mission. The one exception is Building 9204-3 (Beta 3) and it has essentially retained its original configuration since the Manhattan Project.

The mission in Beta 3 changed right after the war ended to one of trying to compete with K-25's gaseous diffusion process for separating uranium, without success. Next was the mission to separate stable isotopes, the genesis of the radioisotopes used for medical research, diagnosis and treatment. This mission was sustained in Beta 3 until 1998 when the calutrons were placed in stand by.

Building 9204-3 (Beta 3) still has calutrons installed in it today and when you enter the high bay the view of the racetrack of calutron magnets takes you back to the Manhattan Project era immediately. One of the control rooms (known as "cubicle" rooms) still looks just like it did in 1945. The only things missing are the stools and the Calutron Girls.

Speaking of calutron cubicle stools, I must tell you the latest addition to the Y-12 History Exhibit Hall at The New Hope Center. Over the weekend, I received a call telling me that someone had an original calutron stool they wanted to donate. Maurice Woods had located this stool and immediately recognized it. He was pleased to be able to help us tell the history of Y-12 and brought it to me for display.

There are only two other calutron stools that I am aware of still in existence. One is at the American Museum of Science and Energy and the other one is chained to a column in Beta 3. If you happen to know of another, please contact me at 576-7781.

There is a really good story associated with the Calutron stool in Beta 3. It was about to be trashed when an individual saved it and kept it hidden for 15 years. In 2005, when Beta 3 was opened to the public for the first time, he brought it out of hiding and let it be a part of the display for the public tours. Over 2,000 people saw the Manhattan Project calutrons, and that stool, for the first time! He keeps the stool chained, even today!

That same individual also saved one of the signs that hung from the ceiling in the cubicle area or control room that said "Do Not Talk to the Operators." Today it hangs in the locked control room of Beta 3. It is the only one of those unique signs left. Recently we photographed it for the East Tennessee Historical Society who will make a replica to go in the new historical display they are creating in the East Tennessee History Center.

Okay, back to the early history of Y-12. General Groves, in *Now It Can Be Told – the story of the Manhattan Project* states the reason for locating Y-12 where it was located and K-25 where it was located some 17 miles apart was "in case a disaster struck one it would not spread to or contaminate the other." Y-12 was located across Pine Ridge from the site of the city to be built for much the same reason. The thought was that the high ridge would protect the town if something "untoward" (as Bill Wilcox often says) might occur.

Remember, they did not really know what to expect as this was the first time what they were attempting had ever been done on such a huge scale. And, after all, they were attempting to “make a bomb!”

Groves goes on to say that construction of Y-12 was undertaken even though it involved incredibly complex equipment installed without the benefit of a full scale pilot plant or intermediate development. He states, “Always we were driven to make haste. Consequently, research, development, construction and operation all had to be started and carried on simultaneously and without appreciable prior knowledge.”

Groves continued regarding Y-12, “Well before the essential research was well started and before the equipment could be designed, we had to start designing and constructing the building to house it. Stone and Webster was in charge of this operation. The research on which all design was based was carried out in the Radiation Laboratory of the University of California, under the direction of Dr. Lawrence; and to operate the plant we selected Eastman Kodak, whose subsidiary, Tennessee Eastman, was an extremely competent organization with much experience in chemical processes.”

Because of the large amount of work needed, three electrical manufacturers were chosen. The work required to be done was apportioned to them as follows: General Electric was given the power supply equipment to build; Allis-Chalmers was given the magnets to manufacture; and Westinghouse was given the process equipment to provide.

The first attempt to start up the calutrons in Building 9201-1 was full of problems. Next week we will continue to look at the early developments during construction and start up of the first operations at Y-12.

Caption: Maurice Woods and the Calutron Stool that he donated to the Y-12 History Exhibit Hall