Oak Ridge and Y-12 grow stronger in the 1950s

The first great era for Oak Ridge was, of course, the Manhattan Project era from 1942 to 1945. That was a time of tremendous growth, peaking at 75,000 residents in Oak Ridge, the fifth largest city in Tennessee, and no one knew for sure where it was as it was not on any maps.

There were some 80,000 people working at Oak Ridge in three huge industrial complex sites, Y-12, X-10 and K-25/S-50. Construction activities were nonstop, operations were around the clock, the city was abuzz with activity night and day.

Without knowing exactly what they were doing, most of the 100,000 plus individuals who at one time or the other worked at the project sites in Oak Ridge, were aware of its importance to the war effort but never dreamed of the actual implications of what they were involved in accomplishing. Even today, it is hard to imagine that the most significant military and industrial complex achievement in the history of the world actually took place just a few years ago and Oak Ridge was a huge part of it.

Then the war ended and uncertainty set in. Change began to occur almost immediately and finally in December 1946 a huge reduction in force at Y-12 literally caused the city of Oak Ridge to shrink to roughly 30,000 - close to its present size of 27,000. Y-12 went from a peak of 22,000 during the war effort to about 5,000 and ultimately as low as 1,600.

Yet, Y-12 remained viable and even began almost immediately to grow. The transition from an electromagnetic separation plant focused on separating uranium 235 for an atomic bomb to separating isotopes of all other elements was the first major change. Although that change began small in Building 9731 with a couple of scientists thinking, why not… This transition was occurring while the calutrons were being first placed in standby and then ultimately removed from all buildings except 9731 and Beta 3.

The next transition for Y-12 was creating the capability to produce uranium metal from K-25's product. At the same time, obtaining the capability to machine the uranium parts needed for the additional nuclear weapons being required to support the United States' build up of its nuclear arsenal in the face of the inevitable Cold War looming on the horizon.

Testing of nuclear weapons began almost immediately and Y-12 began to fabricate the special components required to support that effort. The Trinity test on July 16, 1945 and the tests conducted in 1946, Able and Baker of Operations Crossroads, were built by Los Alamos. However, the 1948 tests, Xray, Yoke and Zebra had components fabricated at Y-12 as has all other nuclear weapons tests since.

The number of tests by the United States grew significantly after the Soviet Union conducted its first nuclear weapons test on August 29, 1949. In the early 1950's there were over 60 different United States nuclear weapons tests and Y-12 provided nuclear components for them all. This was a growing mission and manufacturing nuclear weapons components became the primary mission for Y-12 in the early 1950's and has remained so over the years.

Some other changes included the transition of the research and development organizations to the Oak Ridge National Laboratory and the expansion of the laboratory into Y-12's vacant buildings. While the movement by the laboratory into buildings at Y-12 began with the area that was first used as uranium chemical processing facilities, the laboratory operations soon expanded into all available alpha and beta buildings that Y-12 was not using for weapons related work.

The ORNL presence at the Y-12 site continued to grow over the years. The laboratory sustained significant research units in areas such as fusion energy experiments, large coil testing for fusion energy devices from all over the world, large nuclear container testing and other specialized fields of study requiring large facilities unavailable at the laboratory site, but readily available at Y-12.

The emerging biology research occupied all the buildings in what came to be known as The Biology Complex sitting north of First Street across from Y-12 Development in Buildings 9202 and 9203, the

various available alpha buildings (9201-2 and 9201-3) on the eastern portion of the site soon filled with a wide range of research projects.

As early as 1949, there was an “animal farm” located at Building 9210. Over the years there would continue to be housed a number and variety of animals for research projects from mice, to rabbits and other small animals. Building 9743-2 is still known today as the “Rabbit Quarters.”

In 1950, Building 9211 was the location for the separation of hafnium from zirconium for reactor fuel cladding. Many other unique operations using special materials were undertaken for the first time at Y-12.

Large X-ray machines were procured for testing purposes. Specialized machine tools, unique holding fixtures, new techniques for machining materials that had unusual characteristics requiring special handling – all these activities were becoming routine operations at Y-12 during the first half of the 1950s.