

Y-12 – 70th Anniversary

In a recent internal online publication, YSource, the following statement introduced an article about Y-12's 70th Anniversary, "At a Nov. 14 visit to Y-12, National Nuclear Security Administration's Deputy Administrator for Defense Don Cook shared his outlook on the future and his thanks to employees for continuing their 70-year tradition of making America safer. 'There are three things to remember,' Cook told a meeting of NNSA Production Office and Y-12 employees. 'We have an enduring mission. Y-12 plays a key role in it. And a nuclear deterrent remains the ultimate insurance policy for America.'"

In the same meeting, B&W Y-12 President and General Manager Chuck Spencer also shared his thanks. "Thank you for staying steadfast. It's much appreciated, but to be expected, given the history of Y-12." Spencer presented Cook and Steve Erhart, NPO Manager, with a special anniversary coin marking Y-12's "70 years keeping America safe." The coin was given to Y-12 employees earlier. An anniversary video can be viewed at: <http://www.y12.doe.gov/library/videos/70-years-making-world-safer>.

For 70 years, Y-12 has remained at the heart of the nation's nuclear weapons complex. It may seem at times that we downplay the role Y-12 has in keeping our nation safe, yet, the people who lead us understand the vital nature of Y-12. Our elected officials who support our efforts understand it as well. Our local elected officials and the citizens of East Tennessee also realize the significance of Y-12.

The 70th Anniversary of the existence of Y-12 is something that those of us who know Y-12's history can look upon with a great deal of pride. The accomplishments achieved, many of which have world-wide impact, began in 1943 – 1945 with the separation of uranium 235 for Little Boy, the world's first atomic bomb used in warfare that helped win World War II...the greatest war the world has ever known.

During 1943 – 1945, Y-12 was constructed in just 18 months. Construction began in February 1943. Operation of the first Calutrons (electromagnetic separation units or huge mass spectrometers) was achieved within just a few months; the first shipment of uranium 235 from Y-12 to Los Alamos was made in March 1944. On August 6, 1945, most Y-12'ers, along with the rest of the world, learned for the first time exactly what they had been doing.

By 1947, Y-12 had converted from a uranium separation plant to a weapons component manufacturing plant. The first efforts were to manufacture the uranium metal parts for additional atomic bombs and for nuclear tests. From this beginning, Y-12 has become the world's most precise machine shop. Many first-of-a-kind machine tools have been created through the joint efforts of machine tool manufacturers and Y-12 engineers.

By the early 1950's the next phase for Y-12, in many ways equal to the Manhattan Project task, was the separation of lithium 6 for use in the hydrogen bomb and future thermonuclear weapons. At the time, in 1955– 1963, the majority of the workers knew no more about what they were actually creating than did those early pioneers operating the Manhattan Project's Calutrons to separate uranium during World War II.

Yet, they knew the work being done was extremely important to our nation's freedom. They dedicated themselves to the task at hand as Y-12 has always done. The "Can Do" attitude for which Y-12 is famous was born with these types of seemingly impossible tasks being done as routine operations.

The Cold War was ramping up. Russia exploded an atomic bomb similar to Fat Man and then later exploded a hydrogen bomb causing ever increasing uncertainty and discomfort for the United States. Y-12's mission was again in the forefront of our nation's strategy. Over the years, Y-12 has continued to support our nation's nuclear weapons by manufacturing components for the "secondary," the portion of the nuclear weapon that provides the powerful energy release.

During the Cold War era, 1947 – 1991, Y-12, while continuing to support the nation's nuclear arsenal with specialized components, was also able to provide support to other government agencies. Work for others efforts expanded the reach of technologies developed at Y-12 for nuclear weapons into use in the private sector.

An example of support to other government agencies is the Apollo Lunar Material Return Container, or "Moon Box," which NASA asked Y-12 to machine because of the reputation Y-12 had obtained from introducing numerically controlled machine tools in the early 1960s and becoming the nation's, and likely the world's, most precise machining and measuring facility. Diamond cutting tools were being used to turn mirrors so smooth that polishing them would have scratched the surface.

The "air-bearing spindle," introduced in 1964, improved the machining capability even further. This technology was transferred to private industry, thus improving machining capabilities there as well. In 1967, Y-12 held its first open house in conjunction with the 25th anniversary of Oak Ridge and Y-12.

Next we will continue to look at Y-12's history leading to its 70th Anniversary.