Introduction to Y-12's History

This article marks the beginning of a series that will focus on the history of the Y-12 National Security Complex. Y-12 has employed from 22,000 at its peak to 8,000 in the 1980's during the winning of the Cold War and for the past several years has held an average of about 4,500. It is one of three major Manhattan Project sites in Oak Ridge. Y-12 is the nation's sole storage location for weapons grade uranium, is the Department of Energy's National Nuclear Security Administration's production facility for nuclear weapons secondary's – that part of the weapon that provides the enormous energy release that can be in excess of 10's of megatons of instantaneous energy. Y-12 also assists with the control and handling of weapons grade enriched uranium found in other nations that must be protected from terrorists. This ultra-modern and highly sophisticated manufacturing facility is at once an economic treasure for Oak Ridge and a tremendous and unique resource for our nation.

"Y-12." When one first hears that name for a place, inevitably there is the thought "what an odd name." It must be something special, or it must be something unusual, or it must have some meaning. The actual fact is that the combination of a letter a dash and two numbers that make up "Y-12" have no specific meaning. However, the place it identifies is something special, unusual and holds great meaning for our nation. The letter and numbers were selected exactly for the reason that they do not inherently mean anything. Without some other information, the Manhattan Project planners thought the information "Y-12" would not convey anything for which the place was being used. It was a huge gamble. It was a tremendous undertaking. It was a major part of the most significant industrial/military effort in the history of the world. It was important to keep that effort a secret because our enemy was thought to have been working on the same secret weapon.

Y-12 has kept the Manhattan Project name all these years. Other sites have changed their name to move away from the earlier designations, but we at Y-12 have kept ours. It is a source of pride and reflects a long line of successes and a long lineage of workers who appreciate and uphold the "Can Do" attitude of its earliest workers.

Bear Creek Valley lies between Pine Ridge to the north and Chestnut Ridge to the south. The valley is bordered on the northeast by Scarboro Road and on the southwest by the Clinch River. The Y-12 National Security Complex occupies the upper three miles of the valley and fully covers the one-half mile wide valley floor.

In the 1940s, Y-12 was a monumental national triumph over seemingly insurmountable obstacles. It succeeded in producing a new material so powerful that it changed the world forever and it represented the epitome of an idea transformed into spectacular and tremendous action.

Yet, to grasp the essence of "Y-12" requires more than just the knowledge of these facts. An understanding of the deeper truths and Y-12 symbols must first be gained. The story of John Hendrix must first be appreciated for the wonder it brings regarding time and place and the power of the human mind.

Hendrix was born in Bear Creek Valley (near the center of what is now Y-12) in 1865. He died in 1915 at 49 years of age. In 1900 he had a vision after sleeping on the ground that predicted "a city on Black Oak Ridge" (now Oak Ridge), "a railroad spur" (now running along the edge of what was his property line in Hendrix Creek subdivision), "a factory in Bear Creek Valley that would help win the greatest war there will ever be" (Y-12 produced the uranium for Little Boy the first atomic bomb used in warfare and helped win World War II), and "the seat of power location" (where the Federal Office Building is now located in the eastern section of Oak Ridge).

Y-12 was the primary and first plant site of the Manhattan Project. Leslie R. Groves was promoted to General and given overall responsibility for the entire project. The second site identified was X-10 - the Graphite Reactor - now a National Historic Landmark. In 1943, its

purpose was to demonstrate that an industrial scale reactor could be built to produce plutonium, an alternate material to uranium 235 that was used for a second atomic bomb - Fat Man - dropped on Nagasaki.

The Oak Ridge National Laboratory with its Spallation Neutron Source is the premier multi-purpose laboratory in the United States, with strong science and research missions from energy to nano-science to homeland security. The Y-12 National Security Complex is responsible for the refurbishment of nuclear weapons, storage of nuclear material, is a national prototype center and has been designated as the Department of Energy's Center for Excellence in Uranium as well as preventing the spread of weapons of mass destruction. These facilities are economic engines that fuel the Tennessee's economy and the broader southeastern region of the country. But beyond that they are doing work that impacts the entire world, right here in our community.

This series of articles will recount the history of the Y-12 National Security Complex from its beginnings as the first Manhattan Project site to separate uranium 235 through the numerous mission changes over the years. The story will include the changes needed to help win the Cold War, the inventions and creative methods developed to create what undoubtedly today exists as the world's most precise manufacturing facility and will also include some interesting highlights of one of the Oak Ridge sites where "Science Keeps On Making History."