

A brief history of the Y-12 Development Division — The beginnings of the development division

John M. Googin, junior chemist who later became THE scientist of Y-12 as Dr. Googin, first arrived at Oak Ridge on May 17, 1944, for his new job at Y-12. His first exposure to the “war work” going on at this remote Bear Creek Valley location in East Tennessee was that work already underway in Building 9202.

With only a glance at the processes, he was able to determine the basic chemistry of the work being done at Y-12 and immediately realized the work was intended to create a bomb. He amazed his supervisor with this declaration. Only a very few individuals at Y-12 knew this secret and he learned it within the first day on the job. Such was his insight and such was the work he did for years in Building 9202.

This fine old building remains in use at Y-12 today. It has continued to be a primary hub of creative thought throughout Dr. Googin’s career until his death in January, 1994. The tradition of Dr. Googin’s style of innovative thinking has continued into the years after his death and is still alive and well today. The generation of new ideas coming from the scientists, engineers and workers in Building 9202 has been vitally important to Y-12 over its long history of innovative solutions to challenging missions.

Dr. Googin thought while walking the halls of Building 9202 for years and made his daily routine of oatmeal and hot chocolate. His highly developed technical questions were often the subject of much discussion and debate. Ultimately he was able to take theory into practice on the production floor in amazingly effective processes.

Building 9202 was completed in November of 1943. It was the original location for the Bulk Treatment Laboratory, the processing facility for the Alpha Calutrons feed material. It was where the uranium was processed from its initial state as it arrived in Y-12 from the uranium mines after some slight processing to prepare what was called “gunk” for shipping to Y-12. The process took the uranium “gunk” and chemically purified it for use as feed material for the Alpha Calutrons.

Building 9203 was completed in September 1944 and was a companion building to Building 9202. These two buildings housed the laboratories for processing the uranium. Building 9203 is still used for laboratories, meeting space and offices.

When the calutrons were no longer used for separating uranium, having been replaced by the more efficient K-25 gaseous diffusion process, the last of the Beta Calutrons were shut down in December, 1946. This signaled major changes at Y-12. The workforce dropped from 22,000 people in August 1945 to less than 2,000 in early 1947.

During this most significant transition, many at Y-12 thought the end was near. However, the people working in the development area continued to seek ways to use the calutrons and other capabilities and facilities at Y-12. These large buildings were seen as opportunities for other missions.

Almost immediately after the calutrons were no longer needed to separate uranium, Chris Keim and others in Building 9731 began to separate isotopes of elements other than uranium. Copper was the first. Soon they had a supply of stable isotopes and some of them were sent to the Graphite Reactor to become radioactive and thus producing the world’s first medical isotopes.

In 1947 and 1948, the Clinton Laboratory (renamed to Oak Ridge National Laboratory in 1948) began to expand its research and development activities into many of the large buildings at Y-12, including those in what was to become known as the Biology Complex (9207, 9210, etc.). Several Y-12 research and development organizations were transferred to ORNL as Y-12’s research role was diminished considerably.

The Chemical Development Department of Y-12, located in 9733-1 and -2 was charged with developing a method to separate Hafnium from Zirconium to create pure Zirconium for cladding nuclear reactor fuel pellets. This was in 1950. This organization was later transferred to ORNL.

Two other Y-12 research divisions were transferred organizationally to ORNL in 1950, the Isotope Research and Production Division and the Electromagnetic Research Division. This was the stable isotope program operating in Building 9731 and Building 9204-3 and was the genesis of the medical isotope program.

However, the weapons machining work had come to Y-12 from Los Alamos National Laboratory in the late 1940's. More and more weapons parts were needed for additional nuclear weapons tests and the nation's stockpile of nuclear weapons were being created as a part of the Cold War. Y-12 began to grow its mission again and along with that effort came an increased research and development effort centered on weapons work. This organization evolved into what became the Y-12 Development Division.

Next we will see how the Development Division led the Alloy Development Program, also known as the lithium separation era of Y-12's history. We will also look at the leadership of the organization over the years.