

A brief history of the Biology Complex

Most of the "Biology" buildings were constructed in early 1945 and were built as expansion capability for the uranium preparation operations being conducted across the street in Buildings 9202 and 9203. These two buildings were built in 1943 and were being used to convert the refined uranium to the material required as feed or source material for the Y-12 calutrons used to separate the uranium 235 isotope from the more common uranium 238.

Within a year of operation, the process was being conducted on such a large scale that the buildings were expanded and buildings 9207, 9208 (demolished in 2002), 9210 and 9211 were constructed in early 1945 to provide added capacity should K-25 not be able to meet the requirements for enriching uranium more efficiently than the Y-12 calutron process.

When K-25 was declared an operational success, the calutrons were removed from Y-12 with the exception of two Alpha Calutrons and two Beta Calutrons in 9731 and two Beta Calutron racetracks in Building 9204-3. Buildings 9207, 9208, 9210 and 9211, along with many other buildings in Y-12, were no longer needed as the uranium separation mission had been moved to K-25, a much more economical uranium separation process .

As early as 1947, the Oak Ridge National Laboratory (ORNL), known then as the Clinton National Laboratory, began to use some of the Y-12 surplus buildings. Buildings 9207, 9208 and 9210 were used for the new Biology Division. This use continued until 2002 for Buildings 9207 and 9208 and 2004 for Building 9210.

Alexander Hollaender arrived at the Clinton Laboratories in 1946 and initially began with a few radiobiologists studying microorganisms and fruit flies in crowded rooms behind the dispensary, according to the *ORNL Review*. From this small beginning Hollaender initiated a broad program that would make his division the largest biological laboratory in the world.

By 1947, William and Liane Russell were among the newly forming Biology Division's staff members, having been hired as a husband and wife team expressly because of their pioneering work on the genetic effects of radiation on mice at Bar Harbor, Maine. Hollaender hired the highly respected young couple and added them to his growing group of 70 scientists and technicians.

There was a lack of adequate space at the wartime X-10 site known previously as the Clinton Laboratories and at that time recently renamed the "Clinton National Laboratory." The reason for the severe lack of space was the moratorium on any new construction at the X-10 site during 1946 and 1947 while its future as a potential national laboratory was being debated.

There was strong resentment by politicians and scientists from cities in the northeast and far west against locating a national laboratory in the south. Much less so for one proposed to be located in a place known derisively as "Dogpatch" with unpaved streets and wooded isolated surroundings.

The frequent name changes to the laboratory serves as one indicator of just how uncertain the times were for Oak Ridge. It was during this time that the group led by Dr. William Pollard and several University of Tennessee professors helped the fledgling laboratory get on sound political footing, and by 1948 the name was finally changed to the Oak Ridge National Laboratory...to remain so except for one year beginning in late 1974.

That change in name to the Holifield National Laboratory for one year should be a reminder for us. It demonstrates how we in Oak Ridge must constantly be on guard against seemingly innocent changes that just might result in far-reaching impacts. The world recognized "ORNL" was reinstated late in 1975 by efforts of Senator Howard Baker and others who understood the importance of a title with much acclaim. The newest research facility being constructed at the

laboratory in 1975 was named Holifield Heavy Ion Research Facility in honor of recently retired Chet Holifield, U.S. Representative from California – a friend to Oak Ridge and things nuclear.

There were over 2,000 employees at the laboratory in 1947, some of whom had worked for Y-12 before the December 1946, shut-down of the calutrons resulting in the reduction of the Y-12 workforce to less than 2,000 from a high of over 22,000. This time was one of tremendous change and both sites were in a state of constant ups and downs regarding the future of both sites.

The newly forming Biology Division moved into the large and spacious vacant buildings in what was the first of several buildings to be used by the laboratory at the Y-12 Plant site. The Biology Complex very quickly became world-renowned because of the recognition accorded the most prestigious biology research facility in the nation and the largest such laboratory in the world.

According to the *ORNL Review*, “The biological research that attracted the most public interest was the genetic experiments conducted under the supervision of William and Liane Russell, who used mice to identify the long-term genetic implications of radiation exposure for humans.”

The *ORNL Review* continues, “The Biology Division's greatest long-term influence on science, however, may have come from its cooperation with the University of Tennessee–Oak Ridge Graduate School of Biomedical Sciences and with universities and research centers throughout the nation and the world.”

This was the program that Hollaender founded, along with Mary Bunting and Glenn Seaborg of the Atomic Energy Commission and Andy Holt of the University of Tennessee, in 1968 after retiring from the Oak Ridge National Laboratory in 1966.

The *ORNL Review* concludes regarding Hollaender by saying he “...invented a new style of biological investigation: the melding of enormous, expensive mammalian experiments with basic investigations on a much smaller scale in which the principles underlying the mammalian experiments could be demonstrated and tested in the most delicate and far-reaching way. It is this unique combination of the big and the small, the mission-oriented and the discipline-oriented, that is Alex Hollaender's great contribution to biomedical science. It is a contribution that has forever changed biology.”